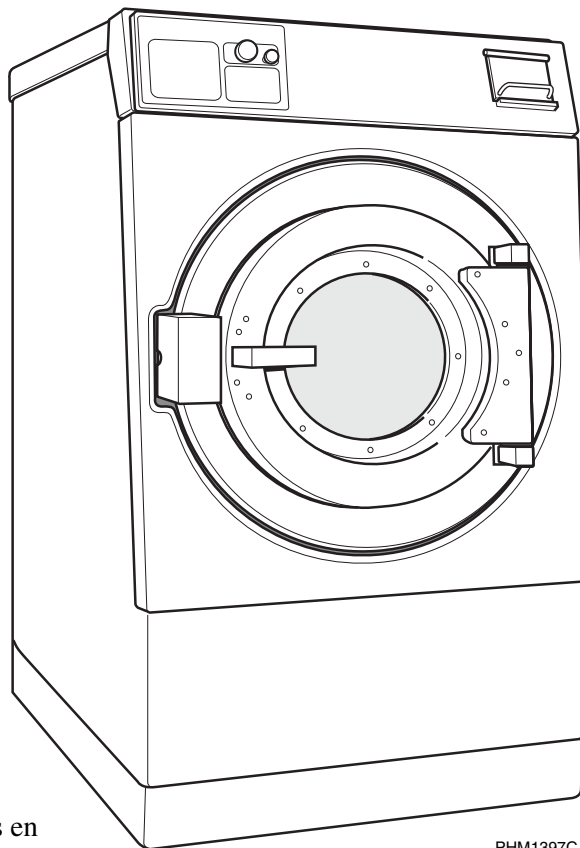


Washer-Extractors

Pocket Hardmount Variable-Speed
PS40 Control

Refer to Page 9 for Model Identification



PHM1397C

Para bajar una copia de estas instrucciones en español, visite www.comlaundry.com

Keep These Instructions for Future Reference.

(If this machine changes ownership, this manual must accompany machine.)



www.comlaundry.com

Part No. F8112101R1
December 2007

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Safety Information

Explanation of Safety Messages

Precautionary statements (“DANGER,” “WARNING,” and “CAUTION”), followed by specific instructions, are found in this manual and on machine decals. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.

	DANGER
DANGER indicates the presence of a hazard that will cause severe personal injury, death, or substantial property damage if the danger is ignored.	

	WARNING
WARNING indicates the presence of a hazard that can cause severe personal injury, death, or substantial property damage if the warning is ignored.	


	CAUTION
CAUTION indicates the presence of a hazard that will or can cause minor personal injury or property damage if the caution is ignored.	

Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.

IMPORTANT: The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

NOTE: The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

Important Safety Instructions

	WARNING
To reduce the risk of fire, electric shock, serious injury or death to persons when using your washer, follow these basic precautions:	
W023	


1. Read all instructions before using the washer.
2. Refer to the GROUNDING INSTRUCTIONS in the INSTALLATION manual for the proper grounding of the washer.
3. Do not wash textiles that have been previously cleaned in, washed in, soaked in, or spotted with gasoline, kerosene, waxes, cooking oils, dry-cleaning solvents, or other flammable or explosive substances as they give off vapors that could ignite or explode.
4. Do not add gasoline, dry-cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapors that could ignite or explode.
5. Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such a period, before using a washing machine or combination washer-dryer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. The gas is flammable, do not smoke or use an open flame during this time.
6. Do not allow children to play on or in the washer. Close supervision of children is necessary when the washer is used near children. This is a safety rule for all appliances.
7. Before the washer is removed from service or discarded, remove the door to the washing compartment.
8. Do not reach into the washer if the wash drum is moving.

Safety Information


9. Do not install or store the washer where it will be exposed to water and/or weather.
10. Do not tamper with the controls.
11. Do not repair or replace any part of the washer, or attempt any servicing unless specifically recommended in the user-maintenance instructions or in published user-repair instructions that the user understands and has the skills to carry out.
12. To reduce the risk of an electric shock or fire, DO NOT use an extension cord or an adapter to connect the washer to the electrical power source.
13. Use washer only for its intended purpose, washing textiles.
14. Never wash machine parts or automotive parts in the machine. This could result in serious damage to the basket.
15. ALWAYS disconnect the washer from electrical supply before attempting any service. Disconnect the power cord by grasping the plug, not the cord.
16. Install the washer according to the INSTALLATION INSTRUCTIONS. All connections for water, drain, electrical power and grounding must comply with local codes and be made by licensed personnel when required.
17. To reduce the risk of fire, textiles which have traces of any flammable substances such as vegetable oil, cooking oil, machine oil, flammable chemicals, thinner, etc., or anything containing wax or chemicals such as in mops and cleaning cloths, must not be put into the washer. These flammable substances may cause the fabric to catch on fire by itself.
18. Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener or product.
19. Keep washer in good condition. Bumping or dropping the washer can damage safety features. If this occurs, have washer checked by a qualified service person.
20. Be sure water connections have a shut-off valve and that fill hose connections are tight. CLOSE the shut-off valves at the end of each wash day.
21. Loading door MUST BE CLOSED any time the washer is to fill, tumble or spin. DO NOT bypass the loading door switch by permitting the washer to operate with the loading door open.
22. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warnings or precautions. To reduce the risk of poisoning or chemical burns, keep them out of the reach of children at all times (preferably in a locked cabinet).
23. Always follow the fabric care instructions supplied by the textile manufacturer.
24. Never operate the washer with any guards and/or panels removed.
25. DO NOT operate the washer with missing or broken parts.
26. DO NOT bypass any safety devices.
27. Failure to install, maintain, and/or operate this washer according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.


NOTE: The WARNINGS and IMPORTANT SAFETY INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining, or operating the washer.


Any problems or conditions not understood should be reported to the dealer, distributor, service agent or the manufacturer.

	WARNING
<p>This machine must be installed, adjusted, and serviced by qualified electrical maintenance personnel familiar with the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury and/or equipment damage, and may void the warranty.</p>	
SW004	

IMPORTANT: Ensure that the recommended clearances for inspection and maintenance are provided. Never allow the inspection and maintenance space to be blocked.

	CAUTION
<p>Install the machine on a level floor of sufficient strength. Failure to do so may result in conditions which can produce serious injury, death and/or property damage.</p>	
W703	

	CAUTION
<p>Be careful around the open door, particularly when loading from a level below the door. Impact with door edges can cause personal injury.</p>	
SW025	

	WARNING
<p>Never touch internal or external steam pipes, connections, or components. These surfaces can be extremely hot and will cause severe burns. The steam must be turned off and the pipe, connections, and components allowed to cool before the pipe can be touched.</p>	
SW014	

Safety Decals

Safety decals appear at crucial locations on the machine. Failure to maintain legible safety decals could result in injury to the operator or service technician.

To provide personal safety and keep the machine in proper working order, follow all maintenance and safety procedures presented in this manual. If questions regarding safety arise, contact the manufacturer immediately.

Use manufacturer-authorized spare parts to avoid safety hazards.

Operator Safety

	WARNING
NEVER insert hands or objects into basket until it has completely stopped. Doing so could result in serious injury.	
SW012	


To ensure the safety of machine operators, the following maintenance checks must be performed daily:

1. Prior to operating machine, verify that all warning signs are present and legible. Missing or illegible signs must be replaced immediately. Make certain that spares are available.
2. Check door interlock before starting operation of machine:
 - a. Attempt to start machine with door open. Machine should not start with door open.
 - b. Close door without locking it and attempt to start machine. Machine should not start with door unlocked.
 - c. Close and lock door and start a cycle. Attempt to open door while cycle is in progress. Door should not open.

If door lock and interlock are not functioning properly, call a service technician.

3. Do not attempt to operate machine if any of the following conditions are present:
 - a. Door does not remain securely locked during entire cycle.
 - b. Excessively high water level is evident.
 - c. Machine is not connected to a properly grounded circuit.

Do not bypass any safety devices in machine.


	WARNING
Never operate the machine with a bypassed or disconnected balance system. Operating the machine with severe out-of-balance loads could result in personal injury and serious equipment damage.	
SW039	

Safe Operating Environment

Safe operation requires an appropriate operating environment for both the operator and the machine. If questions regarding safety arise, contact the manufacturer immediately.

Environmental Conditions

- *Ambient Temperature.* Water in machine will freeze at temperatures of 32°F (0°C) or below.
- Temperatures above 120°F (50°C) will result in more frequent motor overheating and, in some cases, malfunction or premature damage to solid state devices that are used in some models. Special cooling devices may be necessary.
- Water pressure switches are affected by increases and decreases in temperature. Every 25°F (10°C) change in temperature will have a 1% effect on the water level.
- *Humidity.* Relative humidity above 90% may cause machine's electronics or motors to malfunction or may trip ground fault interrupter. Corrosion problems may occur on some metal components in machine.
- If relative humidity is below 30%, belts and rubber hoses may eventually develop dry rot. This condition can result in hose leaks, which may cause safety hazards external to machine in conjunction with adjacent electrical equipment.
- *Ventilation.* The need for make-up air openings for such laundry room accessories as dryers, ironers, water heaters, etc., must be evaluated periodically. Louvers, screens or other separating devices may reduce available air opening significantly.
- *Radio Frequency Emissions.* A filter is available for machines in installations where floor space is shared with equipment sensitive to radio frequency emissions.
- *Elevation.* If machine is to be operated at elevations of over 3280 feet (1000 m) above sea level, pay special attention to water levels and electronic settings (particularly temperature) or desired results may not be achieved.
- *Chemicals.* Keep stainless steel surfaces free of chemical residues.


	DANGER
<p>Do not place volatile or flammable fluids in any machine. Do not clean the machine with volatile or flammable fluids such as acetone, lacquer thinners, enamel reducers, carbon tetrachloride, gasoline, benzene, naptha, etc. Doing so could result in serious personal injury and/or damage to the machine.</p>	
SW002	

- *Water Damage.* Do not spray machine with water. Short circuiting and serious damage may result. Repair immediately all seepage due to worn or damaged gaskets, etc.

Machine Location


- *Foundation.* The concrete floor must be of sufficient strength and thickness to handle floor loads generated by high extract speeds of machine.
- *Service/Maintenance Space.* Provide sufficient space to allow comfortable performance of service procedures and routine preventive maintenance.

Consult installation instructions for specific details.

	CAUTION
<p>Replace all panels that are removed to perform service and maintenance procedures. Do not operate the machine with missing guards or with broken or missing parts. Do not bypass any safety devices.</p>	
SW019	

Input and Output Services

- *Water Pressure.* Best performance will be realized if water is provided at a pressure of 30 – 85 psi (2 – 5.7 bar). Although machine will function properly at lower pressure, increased fill times will occur. Water pressure higher than 100 psi (6.7 bar) may result in damage to machine plumbing. Component failure(s) and personal injury could result.
- *Steam Heat (Optional) Pressure.* Best performance will be realized if steam is provided at a pressure of 30 – 80 psi (2 – 5.4 bar). Steam pressure higher than 125 psi (8.5 bar) may result in damage to steam components and may cause personal injury.
- For machines equipped with optional steam heat, install piping in accordance with approved commercial steam practices. Failure to install supplied steam filter may void warranty.
- *Drainage System.* Provide drain lines or troughs large enough to accommodate total number of gallons that could be released if all machines on site drained at same time from highest attainable level. If troughs are used, they should be covered to support light foot traffic.
- *Power.* For personal safety and for proper operation, machine must be grounded in accordance with state and local codes. Ground connection must be to a proven earth ground, not to conduit or water pipes. Do not use fuses in place of circuit breaker. An easy-access cutoff switch should also be provided.

	WARNING
<p>Ensure that a ground wire from a proven earth ground is connected to the ground lug near the input power block on this machine. Without proper grounding, personal injury from electric shock could occur and machine malfunctions may be evident.</p>	
SW008	

Always disconnect power and water supplies before a service technician performs any service procedure. Where applicable, steam and/or compressed air supplies should also be disconnected before service is performed.

DirectDrive

Machines equipped with DirectDrive require special attention with regard to operating environment.

- An especially dusty or liny environment will require more frequent cleaning of AC inverter drive cooling fan filter and of AC inverter drive itself.
- Power line fluctuations from sources such as uninterruptible power supplies (UPS) can adversely affect machines equipped with AC inverter drive. Proper suppression devices should be utilized on incoming power to machine to avoid problems.
- A clean power supply free from voltage spikes and surges is absolutely essential for machines equipped with AC inverter drive. Inconsistencies (peaks and valleys) in power supply can cause AC inverter drive to generate nuisance errors.

If voltage is above 230 Volt for 200 Volt installation or 460 Volt for 400 Volt installation, ask power company to correct. As an alternative, a step-down transformer kit is available from distributor. If voltage is above 240 Volt for 200 Volt installation or 480 Volt for 400 Volt installations, a buckboost transformer is required.
- Sufficient space to perform service procedures and routine preventive maintenance is especially important for machines equipped with AC inverter drive.

Model Identification

Information in this manual is applicable to these models:

	Medium Speed		High Speed	
40 Pound	CP040PMN1 CP040PMQ1 CP040PMX1 CPC40M IP040PMN1	IP040PMQ1 IP040PMX1 IPH40M IPH180	CP040PHN1 CP040PHQ1 CP040PHX1 CPC40H IP040PHN1	IP040PHQ1 IP040PHX1 IPH40H JP040PHN1 JP040PHQ1
60 Pound	CP060PMN1 CP060PMQ1 CP060PMX1 CPC60M IP060PMN1	IP060PMQ1 IP060PMX1 IPH60M IPH270 JP060PMQ1	CP060PHN1 CP060PHQ1 CP060PHX1 CPC60H IP060PHN1	IP060PHQ1 IP060PHX1 IPH60H JP060PHN1 JP060PHQ1
80 Pound	CP080PMN1 CP080PMQ1 CPC80M IP080PMN1	IP080PMQ1 IPH80M IPH370	CP080PHN1 CP080PHQ1 CPC80H IP080PHN1	IP080PHQ1 IPH80H JP080PHN1 JP080PHQ1
100 Pound	CP100PMN1 CP100PMQ1 CPC100M IP100PMN1	IP100PMQ1 IPH100M IPH460 JP100PMQ1	CP100PHN1 CP100PHQ1 CPC100H IP100PHN1	IP100PHQ1 IPH100H JP100PHN1 JP100PHQ1
125 Pound	Not Applicable		CP125PHN1 CP125PHQ1 CPC125H IP125PHN1	IP125PHQ1 IPH125H IPH570 JP125PHN1
140 Pound	CP140PMN1 CP140PMQ1 CPC140M IP140PMN1	IP140PMQ1 IPH140M IPH640 JP140PMQ1	CP140PHN1 CP140PHQ1 CPC140H IP140PHN1	IP140PHQ1 IPH140H JP140PHN1 JP140PHQ1
175 Pound	Not Applicable		CP175PHN1 CPC175H IP175PHN1	IPH175H IPH790

Model Number Familiarization Guide	
Sample Model Number: IP060PMQ1	
I	Model Number Prefix Brand
P	Product Family; P=IPH
060	Washer-Extractor Capacity (pounds dry weight of laundry)
P	Type of Control; P=PS40
M	Spin Speed; M=Medium
Q	Electrical Voltage; Q=200-208/220-240 Volt/50 or 60 Hertz/3 Phase

Introduction

This manual is designed as a guide for the installation of a washer-extractor equipped with DirectDrive.

NOTE: All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.

Delivery Inspection

Upon delivery, visually inspect crate, protective cover and unit for any visible shipping damage. If the crate, protective cover or unit is damaged or signs of possible damage are evident, have the carrier note the condition on the shipping papers before the shipping receipt is signed or advise the carrier of the condition as soon as it is discovered.

Remove the crate and protective cover as soon after delivery as possible. If any damage is discovered upon removal of the crate and/or protective cover, advise the carrier and file a written claim immediately.

Nameplate Location

The nameplate is located inside the door and on the upper rear panel. Always provide the machine's serial number and model number when ordering parts or when seeking technical assistance. Refer to *Figure 1*.

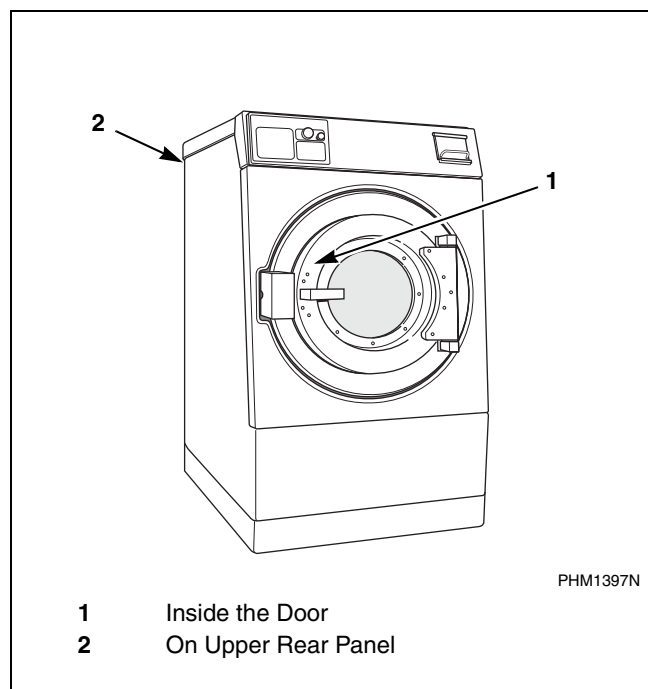


Figure 1

Replacement Parts

If literature or replacement parts are required, contact the source from which the washer-extractor was purchased or contact Alliance Laundry Systems LLC at (920) 748-3950 for the name of the nearest authorized parts distributor. A parts manual may be ordered by returning the reply card provided with each washer-extractor.

Customer Service

For technical assistance, contact your local distributor or call:

(920) 748-3121
Ripon, Wisconsin

A record of each washer-extractor is on file with the manufacturer. Always provide the machine's serial number and model number when ordering parts or when seeking technical assistance. Refer to *Figure 1*.

Specifications and Dimensions

High Speed Models

	Models						
Specifications	40H	60H	80H	100H	125H	140H	175H
Overall Dimensions							
Overall Width, in. (mm)	32 (813)	34.5 (876)	42.5 (1080)	42.5 (1080)	56.3 (1430)	56.3 (1276)	56.3 (1276)
Overall Height, in. (mm)	57 (1448)	62.6 (1590)	70 (1778)	70 (1778)	77.1 (1958)	77.1 (1958)	77.1 (1958)
Overall Depth, in. (mm)	45.6 (1158)	47.8 (1213)	51.4 (1306)	56.4 (1433)	56.1 (1425)	59.1 (1502)	64 (1626)
Weight and Shipping Information							
Net Weight, lbs. (kg)	1690 (768.2)	1795 (815.9)	1926 (875.5)	2167 (985)	2749 (1247)	3027 (1375.9)	3277 (1489.5)
Domestic Shipping Weight, lbs. (kg)	1770 (804.5)	1895 (861.3)	2026 (920.9)	2267 (1030.5)	2849 (1292)	3127 (1421.3)	3377 (1535)
Domestic Shipping Volume, ft. ³ (m ³)	63 (1.78)	76.9 (2.18)	110 (3.11)	122 (3.45)	160 (4.53)	167 (4.73)	179 (5.16)
Wash Cylinder Information							
Cylinder Diameter, in. (mm)	27 (686)	31 (787)	37 (940)	37 (940)	43 (1092)	43 (1092)	43 (1092)
Cylinder Depth, in. (mm)	19 (483)	22 (559)	21 (533)	26 (660)	24 (610)	27 (686)	32 (813)
Cylinder Volume, ft. ³ (l)	6.3 (178.3)	9.6 (271.7)	13.1 (370.7)	16.2 (458.5)	20.1 (569.2)	22.7 (642.4)	26.8 (759.9)
Perforation Size, in. (mm)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)
Cylinder Capacity 1:10 Fill Ratio, lbs. (kg)	39.3 (17.8)	60 (27.2)	81.6 (37)	101 (45.9)	125 (57)	141.7 (64.3)	175 (79.5)
Door Opening Information							
Door Opening Size, in. (mm)	15 (381)	17 (432)	20 (508)	20 (508)	24.5 (622)	24.5 (622)	24.5 (622)
Height of Door Bottom Above Floor, in. (mm)	25.5 (648)	28.8 (730)	29.6 (752)	30.1 (765)	34 (837)	34.3 (871)	34.8 (884)
Drain System							
Overflow Size, in. (mm)	1.5 (38.1)	1.5 (38.1)	1.5 (38.1)	1.5 (38.1)	3 (76.2)	3 (76.2)	3 (76.2)
Drain Outlet Size, in. (mm)	3 (76.2)	3 (76.2)	3 (76.2)	3 (76.2)	3 (76.2)	3 (76.2)	3 (76.2)
Number of Drain Outlets, (std/opt)	1/2	1/2	1/2	1/2	1/2	1/2	1/2

Table 1 (continued)

All specifications are subject to change without notification.

Specifications and Dimensions

Table 1 (continued)

	Models						
Specifications	40H	60H	80H	100H	125H	140H	175H
Water Inlet							
Connection Size	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	1-1/4 NPT	1-1/4 NPT
Number of Inlets, (std/opt)	2/3	2/3	2/3	2/3	2/3	2/3	2/3
Chemical Supply System							
Number of Dry Chemical Compartments, (std/opt)	1/5	1/5	1/5	1/5	1/5	1/5	1/5
Number of Liquid Supply Connections, (std/opt)	6/12	6/12	6/12	6/12	6/12	6/12	6/12
Cylinder Speeds/Centrifugal Force Data							
Low Wash Speed, RPM (G-Force)	6 (0.014)	6 (0.016)	6 (0.019)	6 (0.019)	6 (0.022)	6 (0.022)	6 (0.022)
Wash Speed, RPM (G-Force)	46 (0.8)	43 (0.8)	39 (0.8)	39 (0.8)	36 (0.8)	36 (0.8)	36 (0.8)
Balance Speed, RPM (G-Force)	72 (2)	67 (2)	62 (2)	62 (2)	57 (2)	57 (2)	57 (2)
Low Extract Speed, RPM (G-Force)	511 (100)	477 (100)	437 (100)	437 (100)	405 (100)	405 (100)	405 (100)
Medium Extract Speed, RPM (G-Force)	605 (140)	564 (140)	516 (140)	516 (140)	479 (140)	479 (140)	479 (140)
High Extract Speed, RPM (G-Force)	775 (230)	723 (230)	662 (230)	662 (230)	573 (200)	573 (200)	573 (200)
Maximum SmartSpin Speed, RPM (G-Force)	885 (300)	826 (300)	756 (300)	756 (300)	701 (300)	640 (250)	640 (250)
Drive Train Information							
Number of Motors In Drive Train	1	1	1	1	1	1	1
Drive Motor Power, hp (kW)	3 (2.3)	5 (3.7)	7.5 (5.6)	7.5 (5.6)	10 (7.5)	7.5 (5.6)	15 (11.2)
Balance Detection							
Vibration Switch Installed	STD	STD	STD	STD	STD	STD	STD
Electrical Heating (Optional)							
Total Electrical Heating Capacity, kW	21.5@240V 21.5@480V	32.2@240V 21.5@480V	32.2@240V 21.5@480V	32.2@240V 21.5@480V	Not Applicable	Not Applicable	Not Applicable
Number of Electrical Heating Elements	6 – 240V 6 – 480V	9 – 240V 6 – 480V	9 – 240V 6 – 480V	9 – 240V 6 – 480V	Not Applicable	Not Applicable	Not Applicable
Electrical Heating Element Size, kW	3	3	3	3	Not Applicable	Not Applicable	Not Applicable

Table 1 (continued)

All specifications are subject to change without notification.

Table 1 (continued)

	Models						
Specifications	40H	60H	80H	100H	125H	140H	175H
Electrical Connections (Non-electric Heated Models)							
Max. Circuit Breaker Size (200-240V, 3P)	15	15	20	20	30	30	Not Applicable
Max. Circuit Breaker Size (380-480V, 3P)	15	15	15	15	15	15	20

Table 1

All specifications are subject to change without notification.

Medium Speed Models

	Models				
Specifications	40M	60M	80M	100M	140M
Overall Dimensions					
Overall Width, in. (mm)	32 (813)	34.5 (876)	42 (1080)	42.5 (1080)	50.3 (1276)
Overall Height, in. (mm)	57 (1448)	62.6 (1590)	70 (1778)	70 (1778)	77.1 (1958)
Overall Depth, in. (mm)	45.6 (1158)	47.8 (1213)	51.4 (1306)	56.4 (1433)	59.1 (1502)
Weight and Shipping Information					
Net Weight, lbs. (kg)	110 (499)	1175 (533)	1630 (740)	1770 (804)	2300 (1044)
Domestic Shipping Weight, lbs. (kg)	1180 (536)	1250 (567)	1730 (785)	1870 (849)	2450 (1112)
Domestic Shipping Volume, ft. ³ (m ³)	63 (1.78)	76.9 (2.18)	110 (3.11)	122 (3.45)	167 (4.73)
Wash Cylinder Information					
Cylinder Diameter, in. (mm)	27 (686)	31 (787)	37 (940)	37 (940)	43 (1092)
Cylinder Depth, in. (mm)	19 (483)	22 (559)	21 (533)	26 (660)	27 (686)
Cylinder Volume, ft. ³ (l)	6.3 (178.3)	9.6 (271.7)	13.1 (370.7)	16.2 (458.5)	22.7 (642.4)
Perforation Size, in. (mm)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)	0.19 (4.83)
Cylinder Capacity 1:10 Fill Ratio, lbs. (kg)	39.3 (17.8)	60 (27.2)	81.6 (37)	101 (45.9)	141.7 (64.3)
Door Opening Information					
Door Opening Size, in. (mm)	15 (381)	17 (432)	20 (508)	20 (508)	24.5 (622)
Height of Door Bottom Above Floor, in. (mm)	25.5 (648)	28.8 (730.3)	29.6 (751.8)	30.1 (765)	34.3 (871.2)
Drain System					
Overflow Size, in. (mm)	1.5 (38.1)	1.5 (38.1)	1.5 (38.1)	1.5 (38.1)	3 (76.2)
Drain Outlet Size, in. (mm)	3 (76.2)	3 (76.2)	3 (76.2)	3 (76.2)	3 (76.2)
Number of Drain Outlets, (std/opt)	1/2	1/2	1/2	1/2	1/2
Water Inlet					
Connection Size	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	1-1/4 NPT
Number of Inlets, (std/opt)	2/3	2/3	2/3	2/3	2/3

Table 2 (continued)

All specifications are subject to change without notification.

Table 2 (continued)

	Models				
Specifications	40M	60M	80M	100M	140M
Chemical Supply System					
Number of Dry Chemical compartments, (std/opt)	1/5	1/5	1/5	1/5	1/5
Number of Liquid Supply Connections, (std/opt)	6/12	6/12	6/12	6/12	6/12
Liquid Supply Connection Size	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT
Drive Train Information					
Number of Motors In Drive Train	1	1	1	1	1
Drive Motor Power, hp (kW)	3 (2.3)	3 (2.3)	5 (3.7)	5 (3.7)	7.5 (5.6)
Cylinder Speeds/Centrifugal Force Data					
Low Wash Speed, RPM (G-Force)	6 (0.014)	6 (0.016)	6 (0.019)	6 (0.019)	6 (0.022)
Wash Speed, RPM (G-Force)	46 (0.8)	43 (0.8)	39 (0.8)	39 (0.8)	36 (0.8)
Balance Speed, RPM (G-Force)	72 (2)	67 (2)	62 (2)	62 (2)	57 (2)
Extract Speed, RPM (G-Force)	511 (100)	477 (100)	437 (100)	437 (100)	405 (100)
Maximum SmartSpin Speed, RPM (G-Force)	625 (150)	585 (150)	535 (150)	535 (150)	500 (152)
Balance Detection					
Vibration Switch Installed	STD	STD	STD	STD	STD
Electrical Heating (Optional)					
Total Electrical Heating Capacity, kW	21.5@240V 21.5@480V	32.2@240V 21.5@480V	32.2@240V 21.5@480V	32.2@240V 21.5@480V	Not Applicable
Number of Electrical Heating Elements	6 – 240V 6 – 480V	9 – 240V 6 – 480V	9 – 240V 6 – 480V	9 – 240V 6 – 480V	Not Applicable
Electrical Heating Element Size, kW	3	3	3	3	Not Applicable
Electrical Connections (Non-electric Heated Models)					
Max. Circuit Breaker Size (200-240V, 3P)	15	15	15	15	20
Max. Circuit Breaker Size (380-480V, 3P)	15	15	15	15	15

Table 2

All specifications are subject to change without notification.

Machine Dimensions

Dimensional Clearances

Allow a minimum of 24 inches (600 mm) at the rear and 18 inches (450 mm) at the sides for maintenance, inspection and adjustment. Allow at least 18 inches (450 mm) between machines in multiple installations. Machine dimensions are indicated in *Figure 2* through *Figure 8*. For minimum clearances, refer to *Figure 10*.

NOTE: The dimensions shown here are for planning purposes only. They are approximate and subject to normal manufacturing tolerances. If exact dimensions are required for construction purposes, contact the distributor or the manufacturer. We reserve the right to make changes at any time without notice.

40 Pound Models

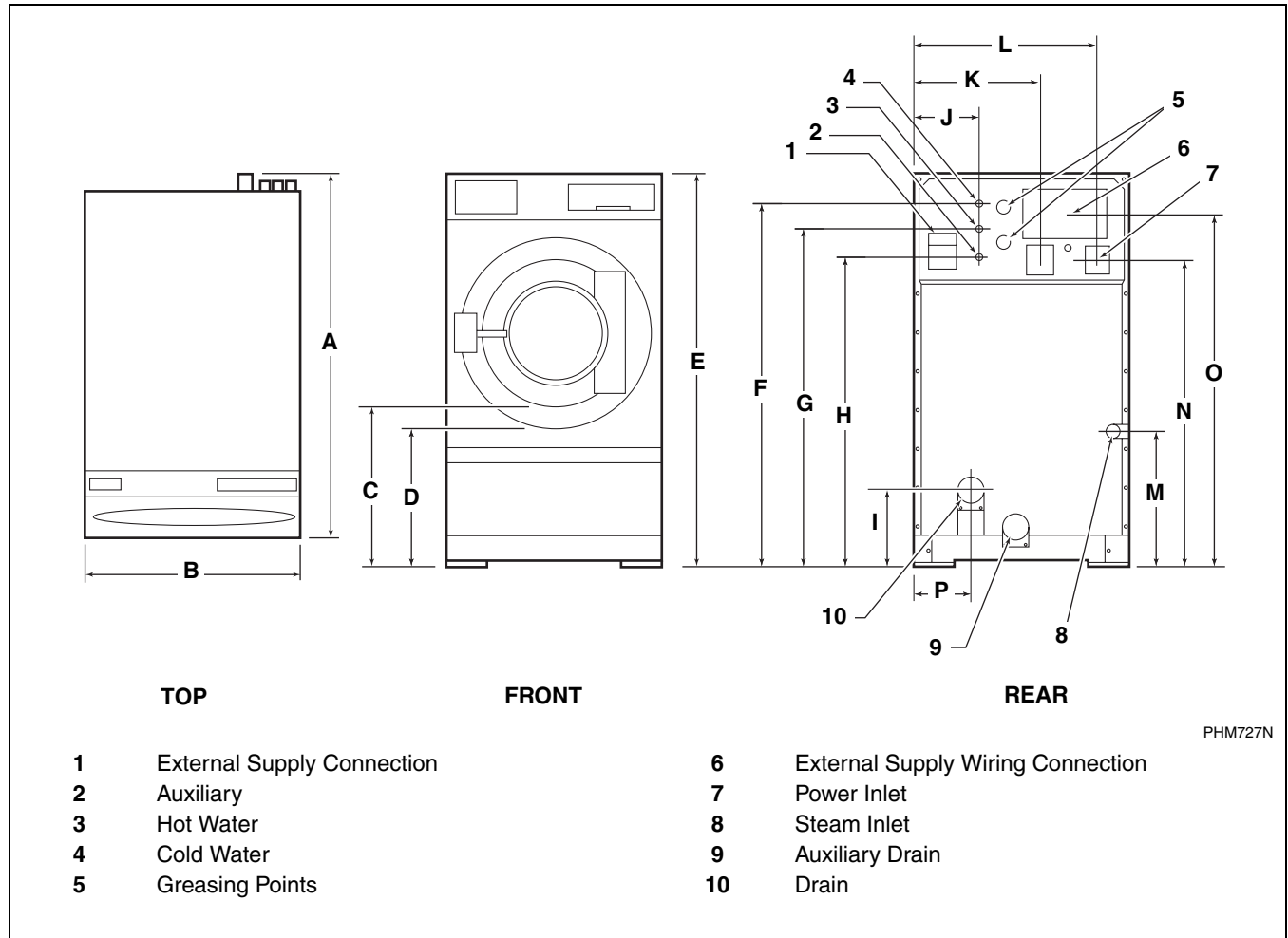


Figure 2

A	45.6 in. (1158 mm)	I	11.7 in. (297 mm)
B	32 in. (813 mm)	J	10.25 in. (260 mm)
C	25.5 in. (648 mm)	K	19.35 in. (491 mm)
D	22.5 in. (572 mm)	L	27.93 in. (709 mm)
E	57 in. (1448 mm)	M	21.8 in. (554 mm)
F	52 in. (1321 mm)	N	43 in. (1092 mm)
G	48 in. (1219 mm)	O	51.4 in. (1306 mm)
H	44 in. (1118 mm)	P	8.88 in. (226 mm)

Table 3

Specifications and Dimensions

60 Pound Models

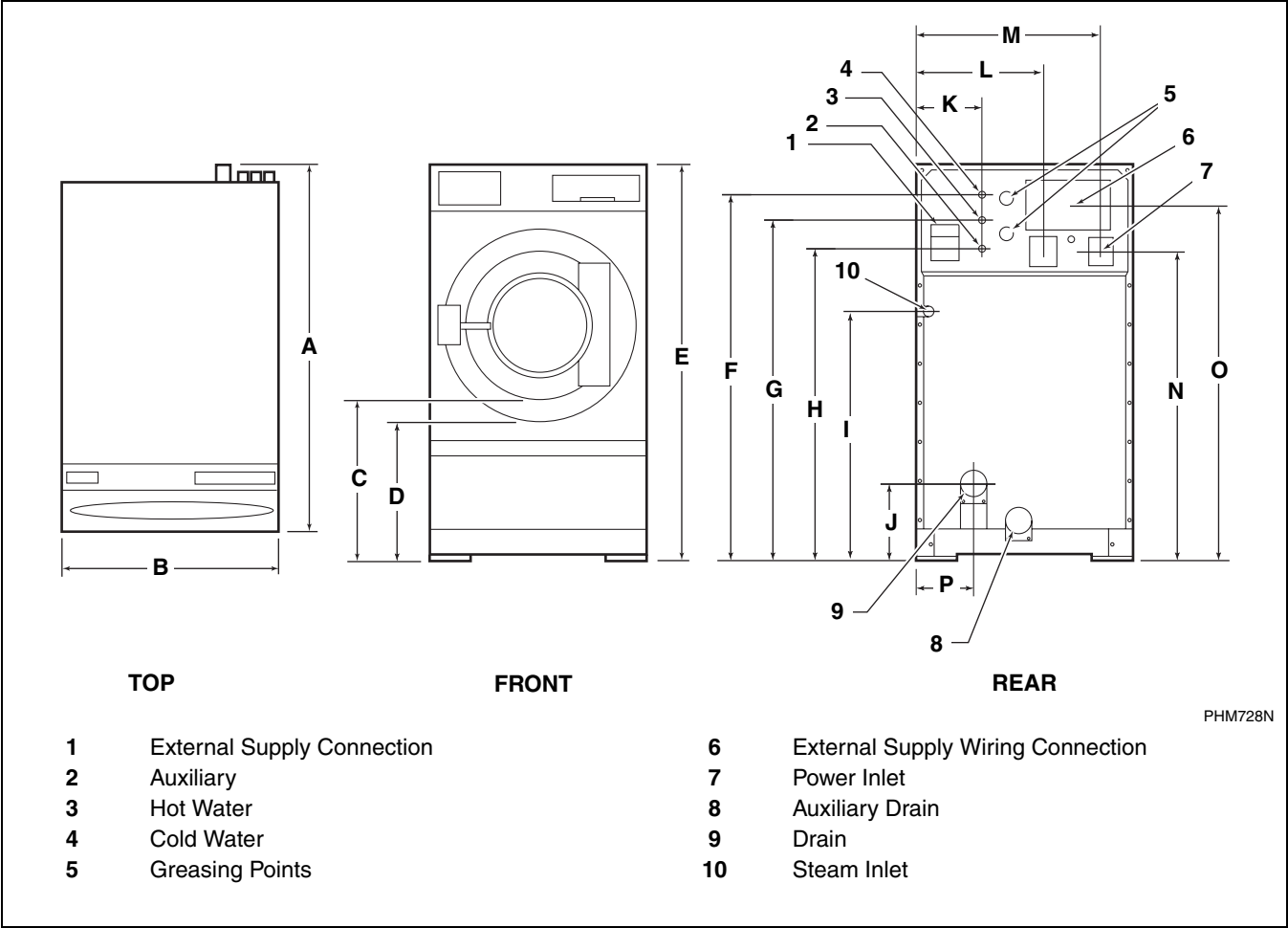


Figure 3

A	47.8 in. (1213 mm)	I	38.5 in. (978 mm)
B	34.5 in. (876 mm)	J	11.7 in. (297 mm)
C	28.8 in. (732 mm)	K	11.5 in. (292 mm)
D	25.8 in. (656 mm)	L	21.1 in. (536 mm)
E	62.6 in. (1590 mm)	M	29.69 in. (754 mm)
F	57.62 in. (1464 mm)	N	48.6 in. (1234 mm)
G	53.62 in. (1362 mm)	O	57.1 in. (1450 mm)
H	49.62 in. (1260 mm)	P	9.63 in. (245 mm)

Table 4

80 Pound Models

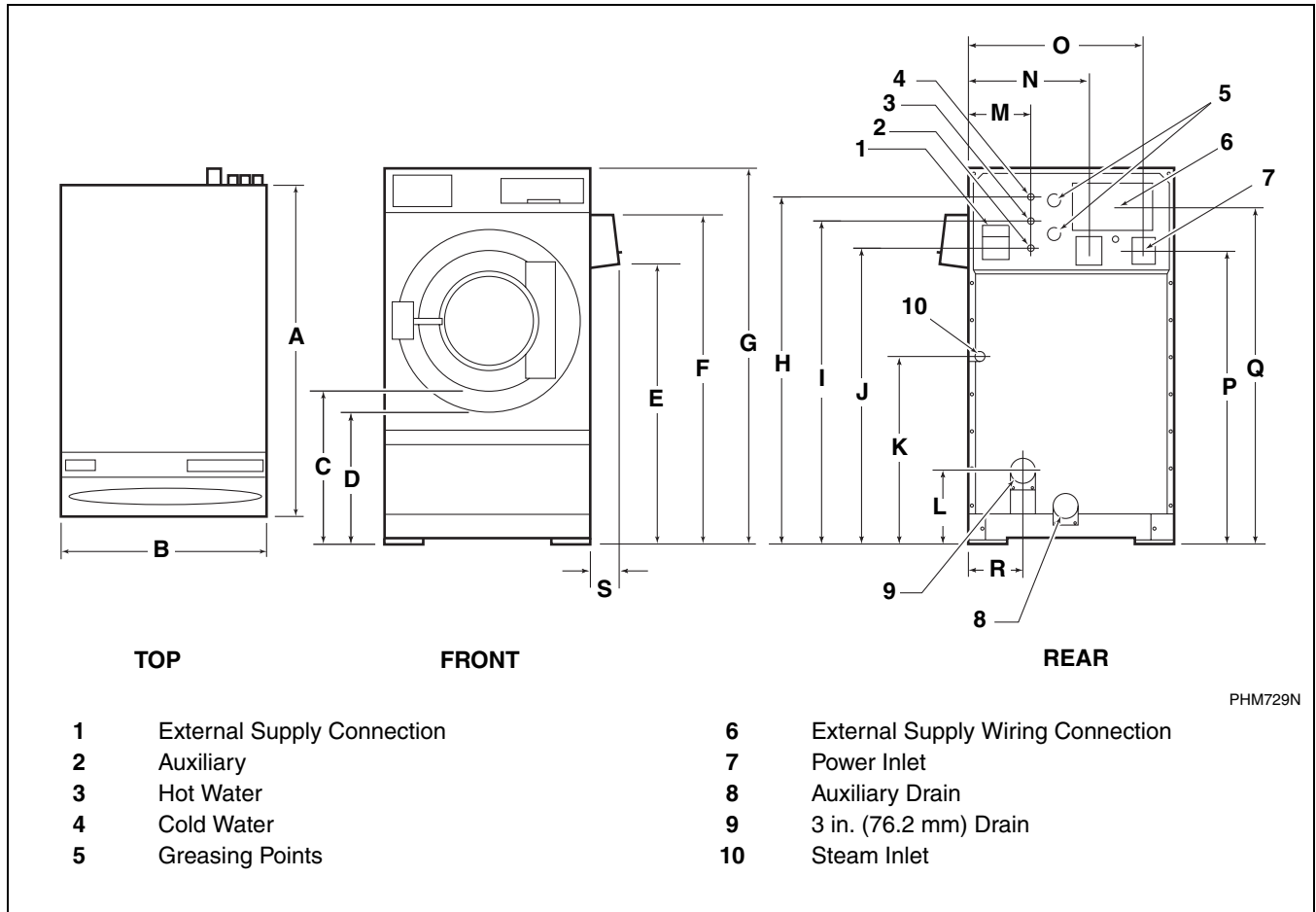


Figure 4

A	51.4 in. (1306 mm)	K	38.4 in. (975 mm)
B	42.5 in. (1080 mm)	L	11.7 in. (297 mm)
C	29.6 in. (752 mm)	M	12.25 in. (311 mm)
D	26.6 in. (676 mm)	N	29 in. (737 mm)
E	52 in. (1321 mm)	O	37.7 in. (958 mm)
F	61.05 in. (1562 mm)	P	56 in. (1422 mm)
G	70 in. (1778 mm)	Q	64.4 in. (1636 mm)
H	66 in. (1678 mm)	R	12 in. (305 mm)
I	62 in. (1575 mm)	S	6 in. (152 mm)
J	58 in. (1473 mm)		

Table 5

Specifications and Dimensions

100 Pound Models

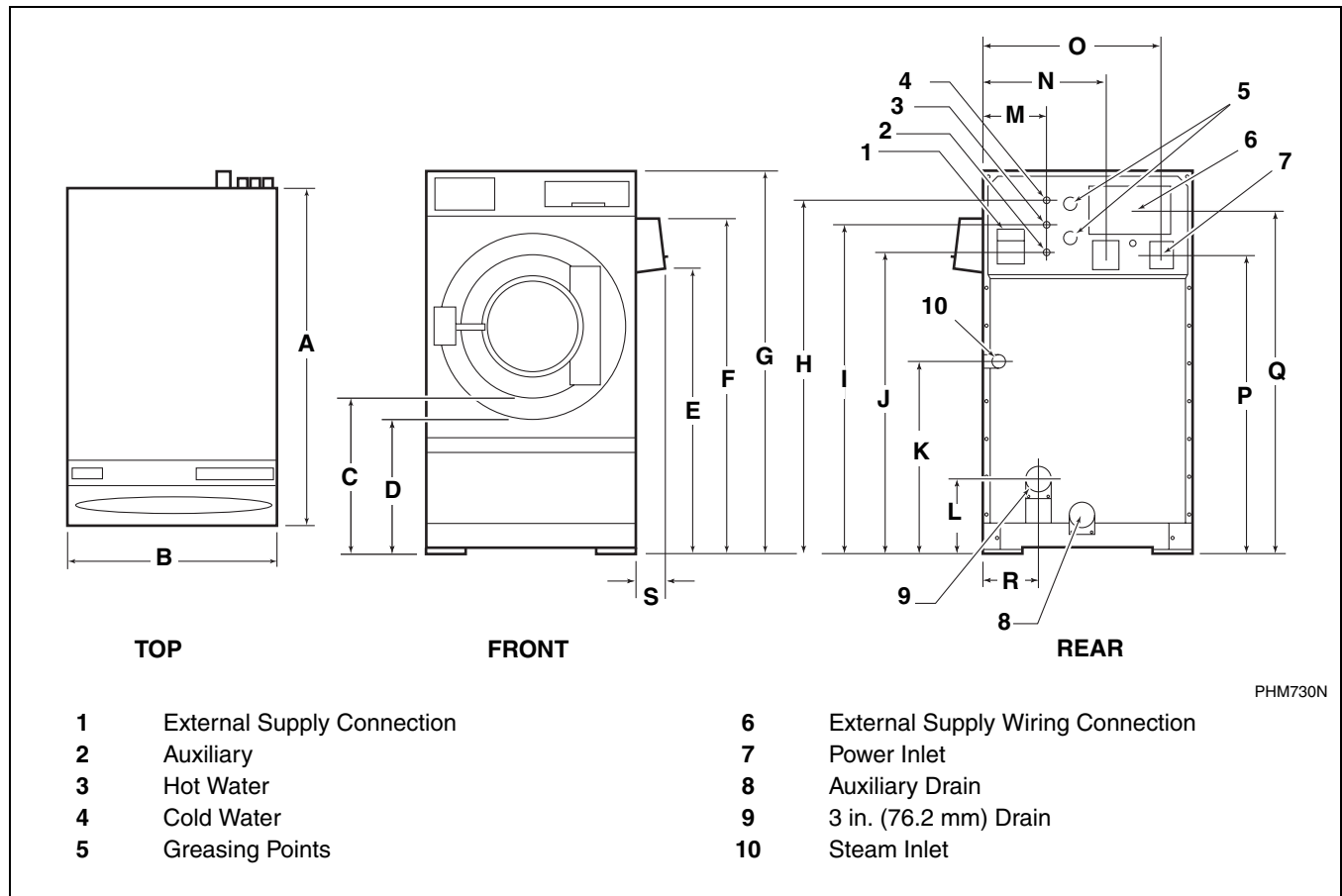


Figure 5

A	56.4 in. (1433 mm)	K	38.4 in. (975 mm)
B	42.5 in. (1080 mm)	L	11.7 in. (297 mm)
C	30.12 in. (765 mm)	N	29 in. (737 mm)
D	27.13 in. (689 mm)	O	37.7 in. (958 mm)
E	52 in. (1321 mm)	M	12.25 in. (311 mm)
F	61.05 in. (1562 mm)	P	56 in. (1422 mm)
G	70 in. (1778 mm)	Q	64.4 in. (1636 mm)
H	66 in. (1676 mm)	R	12 in. (305 mm)
I	62 in. (1575 mm)	S	6 in. (152 mm)
J	58 in. (1473 mm)		

Table 6

125 Pound Models

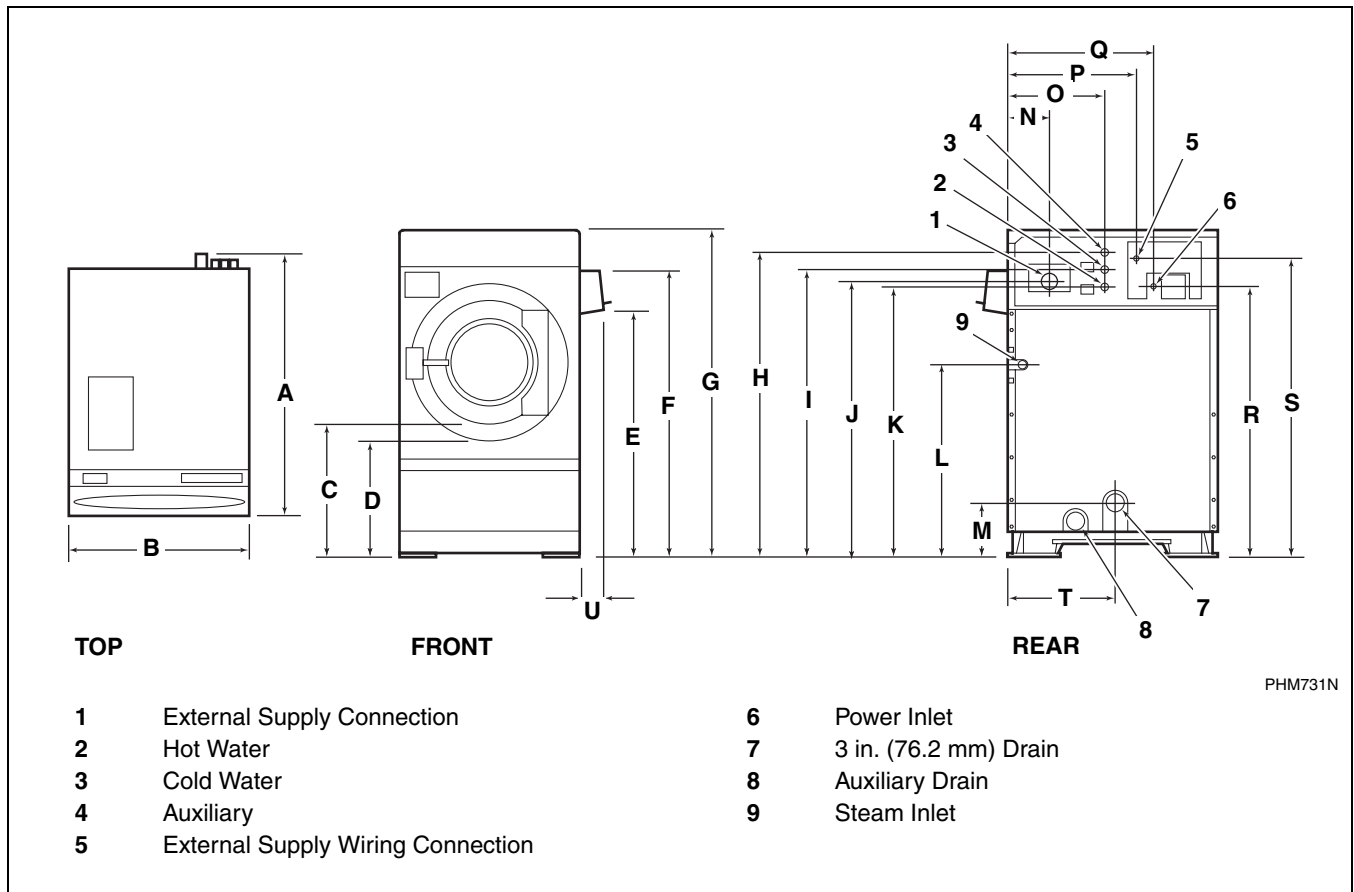


Figure 6

A	56.1 in. (1425 mm)	L	45.3 in. (1149 mm)
B	50.3 in. (1278 mm)	M	11.6 in. (294 mm)
C	34.3 in. (871 mm)	N	6.7 in. (171 mm)
D	31.3 in. (795 mm)	O	18.1 in. (460 mm)
E	58 in. (1473 mm)	P	28.8 in. (732 mm)
F	67.6 in. (1717 mm)	Q	31.1 in. (789 mm)
G	77.1 in. (1958 mm)	R	63.8 in. (1621 mm)
H	71.7 in. (1821 mm)	S	70.2 in. (1784 mm)
I	67.7 in. (1719 mm)	T	19.4 in. (492 mm)
J	64.5 in. (1638 mm)	U	6 in. (152 mm)
K	63.7 in. (1618 mm)		

Table 7

140 Pound Models

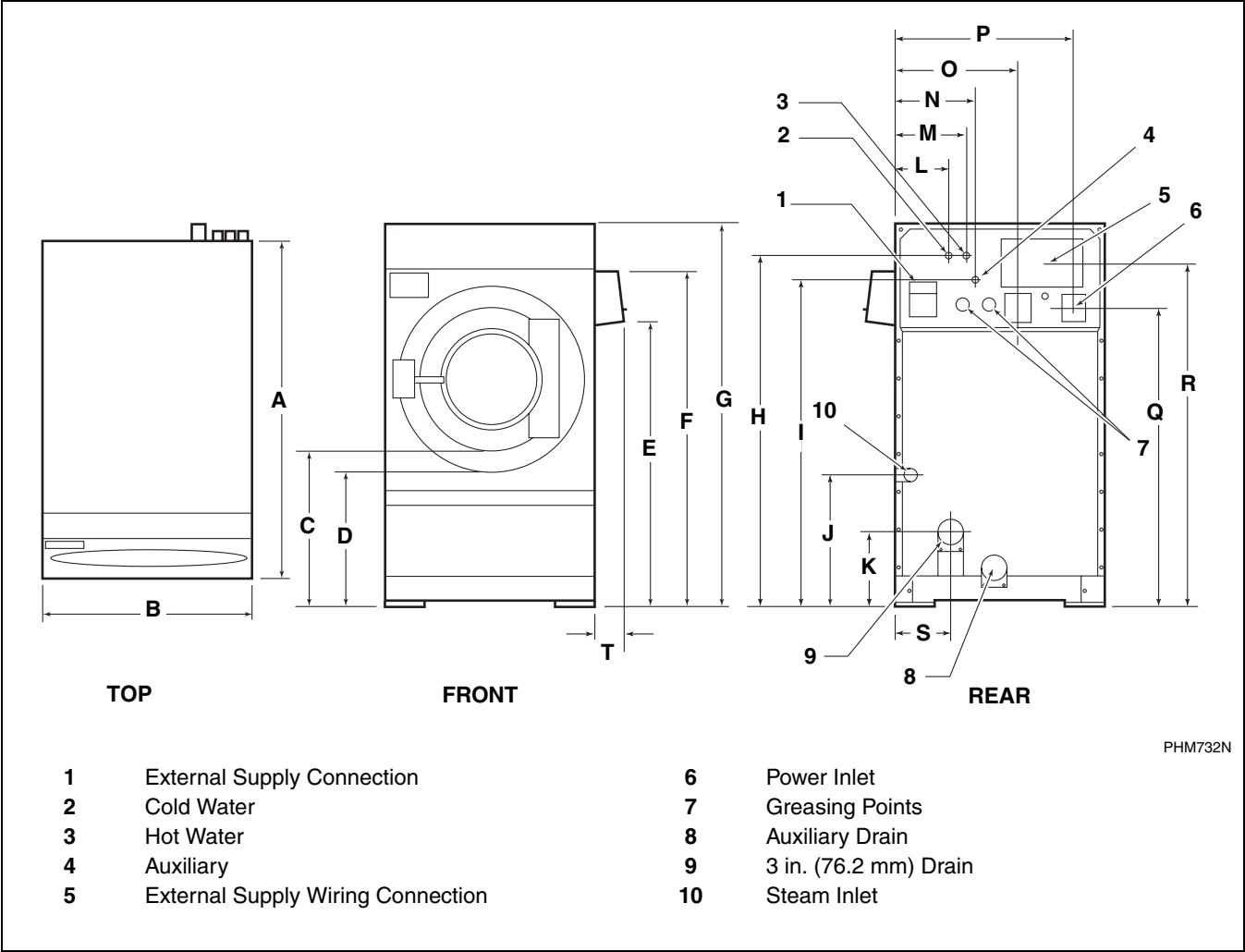


Figure 7

A	59.1 in. (1502 mm)	K	11.7 in. (297 mm)
B	50.3 in. (1276 mm)	L	12 in. (305 mm)
C	34.3 in. (871 mm)	M	15.18 in. (386 mm)
D	31.3 in. (795 mm)	N	17 in. (432 mm)
E	58 in. (1473 mm)	O	36.7 in. (932 mm)
F	67.6 in. (1717 mm)	P	45.26 in. (1150 mm)
G	82 in. (2083 mm)	Q	56 in. (1422 mm)
H	70.8 in. (1798 mm)	R	64.4 in. (1636 mm)
I	65.7 in. (1502 mm)	S	19.3 in. (490 mm)
J	45.6 in. (1158 mm)	T	6 in. (152 mm)

Table 8

175 Pound Models

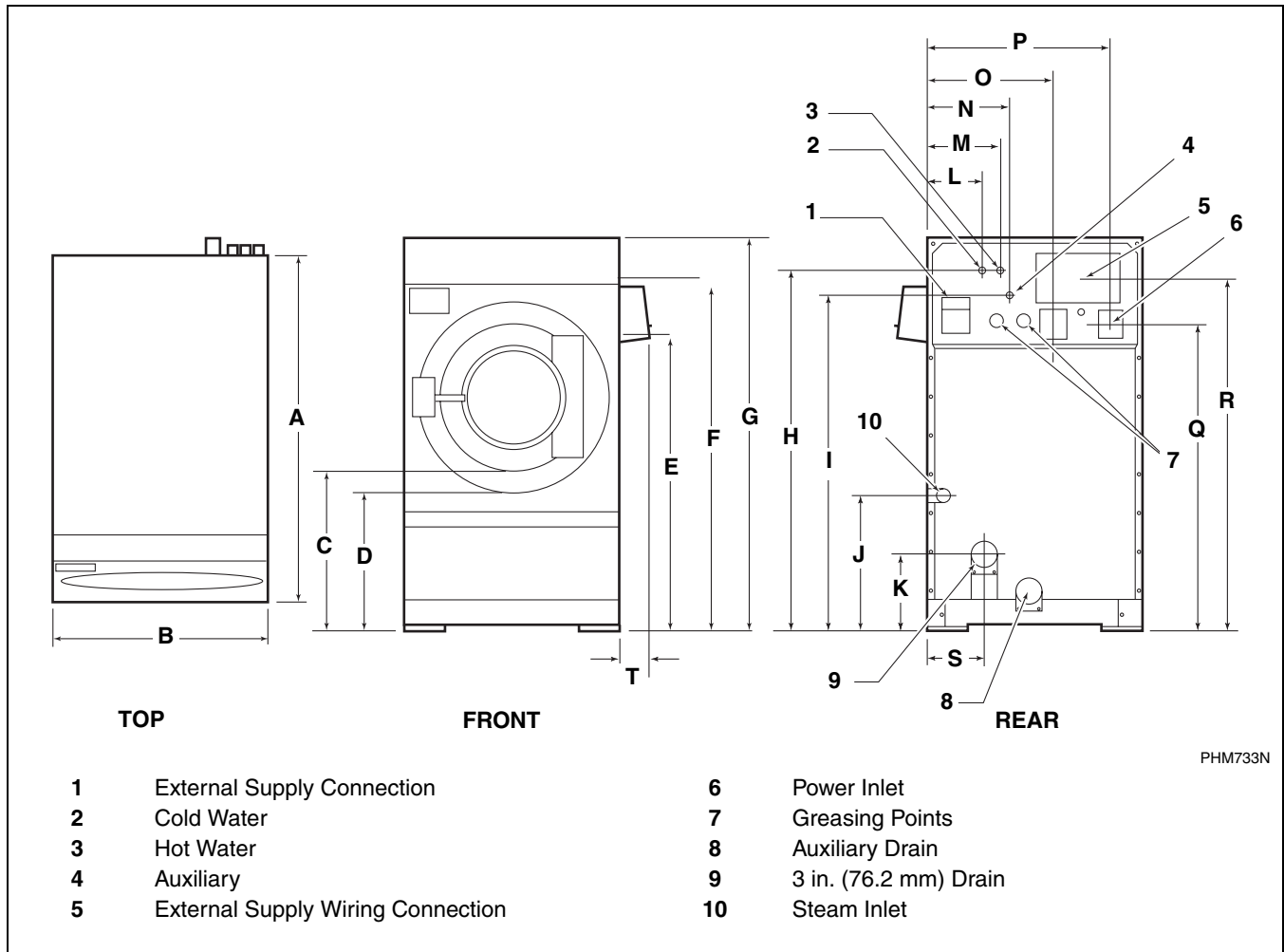


Figure 8

A	64.1 in. (1628 mm)	K	11.7 in. (297 mm)
B	50.3 in. (1276 mm)	L	12 in. (305 mm)
C	34.3 in. (871 mm)	M	15.18 in. (386 mm)
D	31.3 in. (795 mm)	N	17 in. (432 mm)
E	58 in. (1473 mm)	O	36.7 in. (932 mm)
F	67.6 in. (1717 mm)	P	45.26 in. (1150 mm)
G	77.1 in. (1958 mm)	Q	56 in. (1422 mm)
H	70.8 in. (1798 mm)	R	64.4 in. (1636 mm)
I	65.3 in. (1658 mm)	S	19.3 in. (490 mm)
J	45.5 in. (1155 mm)	T	6 in. (152 mm)

Table 9

Front and Rear Features

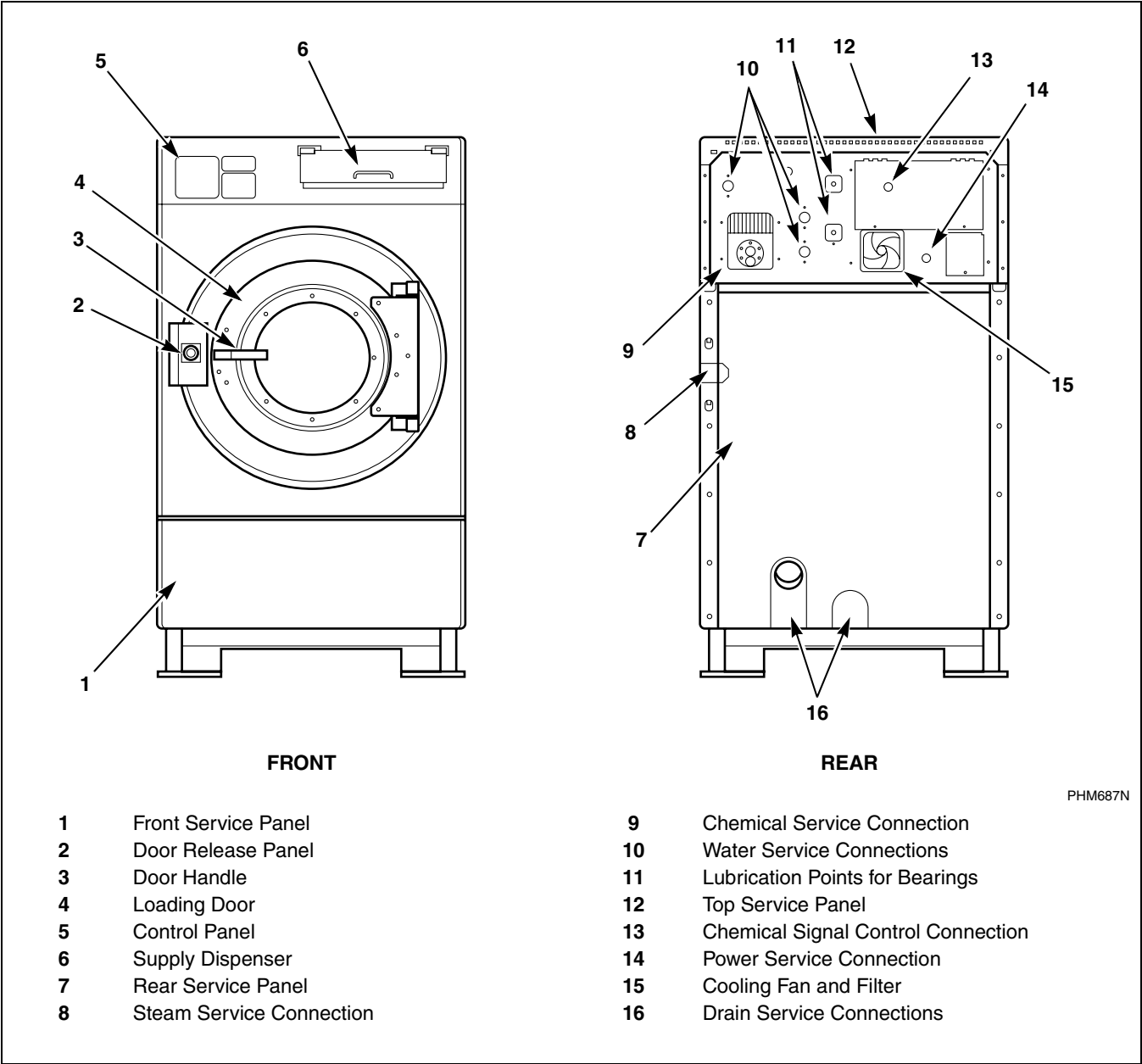


Figure 9

See next two pages for Floor Load Data

Floor Load Data

Machine Size	Basket Diameter	Net Wt. of Machine (lbs.)	Height of Basket Center (in.)	Max RPM	G Calculated	Static Load (lbs.)	Static Floor Pressure (lbs./ft. ²)	Dynamic Load (lbs.)	Max Vertical Load (lbs.)	Max Dynamic Floor Pressure (lbs./ft. ²)	Base Moment (lbs./ft.)	Load Freq (Hz)
40M 100G	27	1583	33.35	511	100	1701	179	786	2440	256.8	2185	8.52
40M 150G	27	1583	33.35	625	149.6	1701	179	706	2359	248.3	1961	10.42
40H 230G	27	1690	33.35	775	230	1808	190.3	1808	3569	375.7	5025	12.92
40H 300G	27	1690	33.35	885	300	1808	190.3	1415	3175	334.2	3931	14.75
60M 100G	31	1627	37.2	477	100	1807	170.9	1201	2936	277.7	3722	7.95
60M 150G	31	1627	37.2	585	150.5	1807	170.9	1083	2818	266.6	3359	9.75
60H 230G	31	1795	37.2	723	229.9	1975	186.8	2758	4661	440.9	8551	125
60H 300G	31	1795	37.2	826	300	1975	186.8	2160	4063	384.3	6696	13.77
80M 100G	37	1766	40	437	100.2	2011	139.2	1636	3549	245.7	5452	7.28
80M 150G	37	1766	40	535	150.2	2011	139.2	1471	3384	234.3	4903	8.92
80H 230G	37	1926	40	662	230	2171	150.3	3754	5826	403.5	12512	11.03
80H 300G	37	1926	40	756	300	2171	150.3	2937	5010	346.9	9791	12.6
100M 100G	37	2007	40.3	437	100.2	2310	145.1	2025	4213	264.7	6799	7.28
100M 150G	37	2007	40.3	535	150.2	2310	145.1	1821	4009	251.9	6114	8.52
100H 230G	37	2167	40.3	662	230	2470	155.2	4646	6995	439.4	15603	11.03
100H 300G	37	2167	40.3	756	300	2470	155.2	3635	5984	375.9	2209	12.6

Table 10 (continued)

Table10 (continued)

Machine Size	Basket Diameter	Net Wt. of Machine (lbs.)	Height of Basket Center (in.)	Max RPM	G Calculated	Static Load (lbs.)	Static Floor Pressure (lbs./ft. ²)	Dynamic Load (lbs.)	Max Vertical Load (lbs.)	Max Dynamic Floor Pressure (lbs./ft. ²)	Base Moment (lbs./ft.)	Load Freq (Hz)
125H 200G	43	2749	46.5	573	200.3	3124	165.8	5006	7980	423.6	19400	9.55
125H 300G	43	2749	46.5	701	299.7	3124	165.8	4496	7470	396.5	17421	11.68
140M 100G	43	2749	46.8	405	100	3174	155.5	2835	5839	286	11057	6.75
140M 150G	43	2749	46.8	500	152.5	3174	155.5	2593	5597	274.2	10112	8.33
140H 200G	43	3027	46.8	573	200.3	3452	169.1	5675	8957	438.8	22134	9.55
140H 250G	43	3027	46.8	640	249.8	3452	169.1	4248	7530	368.9	16567	10.67
175H 200G	43	3450	46.8	573	200.3	3975	166.6	7009	10774	451.5	27335	9.56
175H 250G	43	3450	46.8	640	249.8	3975	166.6	5246	9011	377.6	20461	10.67

Table 10

Installation Instructions


Surface

These machines must be securely anchored on a solid, flat reinforced concrete surface capable of withstanding the weight of the machine and the considerable forces generated during the spin/extract cycle. Surface should be a high quality concrete (minimum 3500 psi test strength) and at least 12 in. (305 mm) thickness for all models. The surface should be clean, flat and free of irregularities. The pad should be 12 in. (305 mm) larger than the footprint of the machine on all sides, beveling out towards the bottom of the pad.

Anchors

The use of “Hilti” brand or equivalent expansion bolt, chemical adhesive anchor or “J” bolts is recommended for installing washer-extractors.

Mounting

	WARNING
<ul style="list-style-type: none">• Always mount this machine on a solid, stable ground floor.• Never install a hard mount washer-extractor on an above ground floor or over a basement.• Never use any material between the machine and floor except grout. The use of rubber pads, neoprene or other materials will make the installation unsafe, noisy and will void all warranties.	
W706	

On Metal Base

Installation on a raised metal base is not recommended.

On Concrete

Refer to *Grouting and Setting Machine* section.

Mounting Bolt Installation Requirements

Location

Plan the location of the machines. When placing machines consider the following:

- The loading door is easily accessible to your workers and does not interfere with other equipment such as dryers or adjacent washers (door swings open 180 degrees). Make sure that the machine does not block emergency exits, open doors, work traffic paths, etc.
- There is adequate clearance in front of the machine for workers and laundry carts or to remove the basket.
- There is clearance behind and above the machine to remove the rear and top service panels to safely perform periodic maintenance. Always check local codes. Refer to *Clearances* section.

All machine dimensions are subject to manufacturing tolerances and design revisions. All specifications are subject to change without notice. If precise machine dimensions are required for construction, consult the manufacturer for verification.

All washer-extractors must be mounted using high strength machinery anchor bolts in 3500 psi (24000 N/m²) reinforced concrete. The concrete is to be a minimum of 12 in. (305 mm) thick over 24 in. (610 mm) of compacted fill dirt. The pad should be 12 in. (305 mm) larger than the footprint of the machine on all sides, beveling out towards the bottom of the pad.

Clearances

When installing the washer-extractor it is important to allow adequate clearance on all sides of the machine. If multiple machines are installed, observe the minimum clearance allowed between machines. Refer to *Figure 10*.

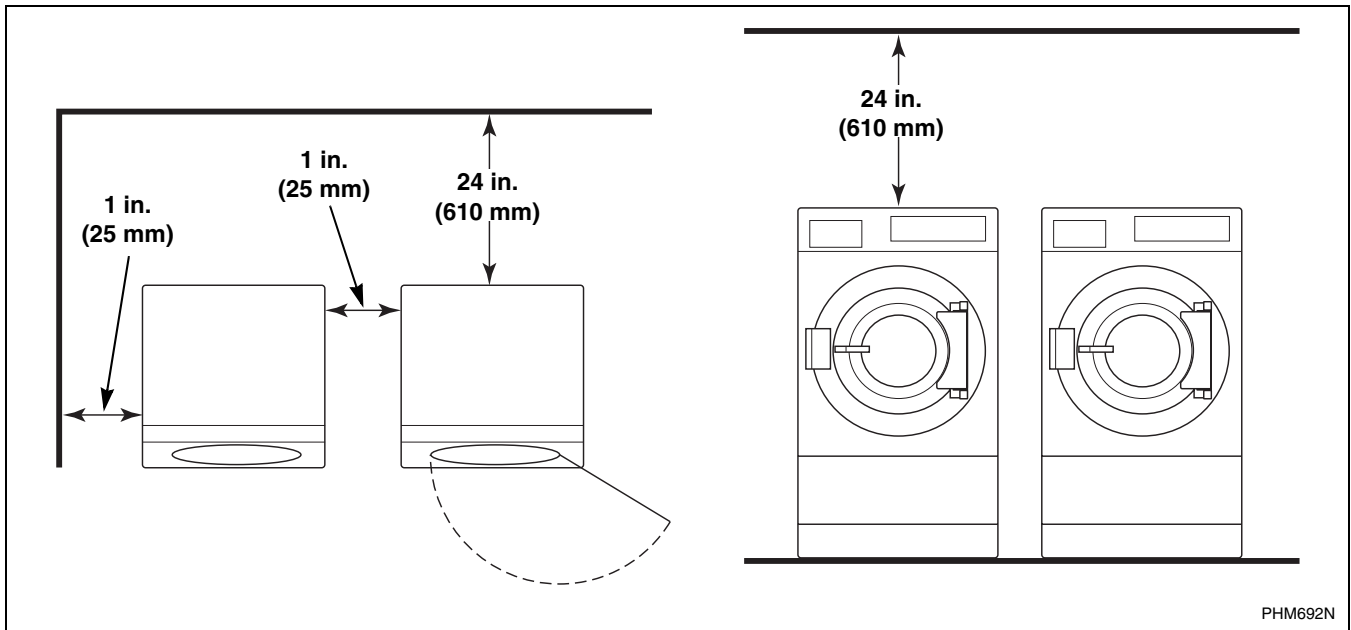


Figure 10

Specifications and Dimensions

If the machines are to be mounted less than 18 in. (457 mm) from each other or less than 18 in. (457 mm) from a side wall, only the inside bolt holes will be accessible. If the machines are to be mounted less than 6 in. (152 mm) from each other, a wall or other equipment, they must be installed without using the skirt around the bottom, as it cannot be reinstalled after the machines are in place.

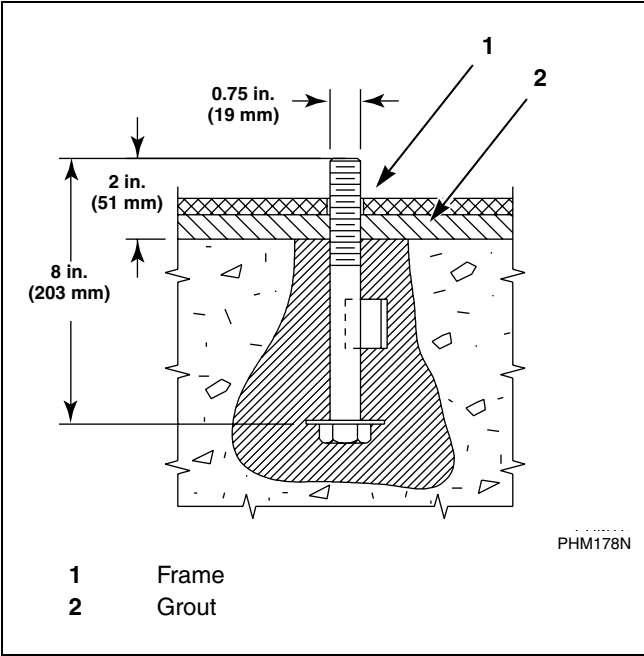


Figure 11

A bolt-locator fixture or rebar frame is available as an option. This rigid welded assembly made of reinforcing rod and mounting bolts is designed to be embedded in concrete. Refer to *Figure 12*.

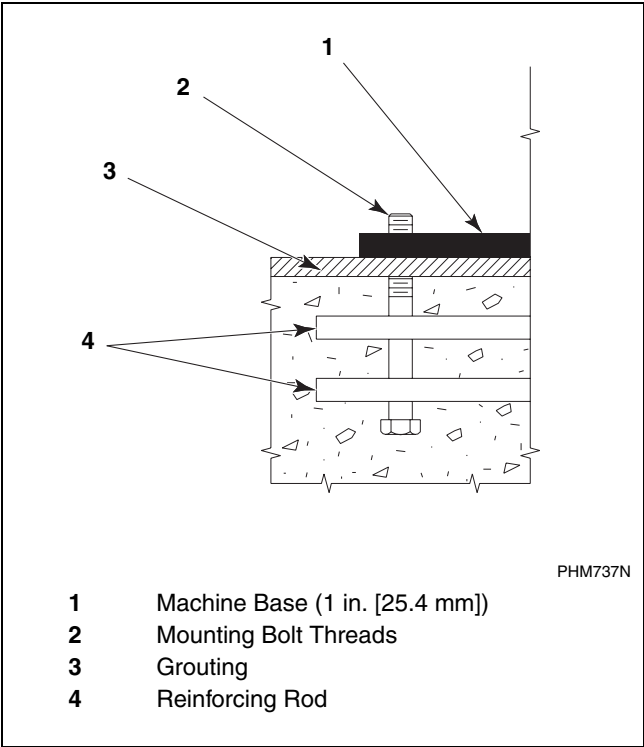



Figure 12

Installing Anchors

1. Before installing anchor bolts, measure holes to verify that they match bolt hole pattern in base of frame.
2. Clean out anchor holes and floor around them.
3. Insert anchors and secure them per their manufacturer's installation instructions.

Grouting and Setting Machine

	WARNING
<p>Be very careful when lifting and moving machine. If machine falls, serious personal injury or death may result.</p>	
W707	

After concrete has cured and anchor bolts are properly set, proceed as follows:

1. Remove two 1/4-20 bolts that secure trim skirt and remove skirt.
2. Remove wood skid by unscrewing 4 carriage bolts holding it to bottom of machine frame.
3. Lift machine off skid with an appropriately sized forklift or palette jack.
4. Carefully locate machine over anchor bolts and lower it into place – all anchor bolts should pass through the frame holes easily.
5. Using 3 removable spacers, raise machine about 1/2 in. (12 mm) and level it both front to rear and side-to-side. The machine should rest on 3 points when this operation is completed.
6. Remove rear panel so inside is accessible for grouting.
7. Mix enough machinery grout to fill all spaces between machine base and floor. Grout completely under all frame members. Force grout under machine base until all voids are filled.
8. Before grout has set and become stiff, carefully remove 3 spacers, allowing machine to settle into wet grout.
9. When grout is fully hardened, place lock-washers and nuts on anchor studs. Tighten nuts in even increments using a diagonal pattern. This will help insure equal tension at all anchor points.

NOTE: After machine has been in place and operated for a day, retighten anchor bolts – some types of grout shrink slightly and can leave machine anchors loose.

Mounting Bolt Hole Locations

Use a sturdy template to guide hammer-drill into floor. The bit will have a tendency to walk as it sinks in, making your hole locations inaccurate. Take your time drilling and keep holes as perfect as possible – the more accurate they are, the easier it will be to sit the machine in place. A heavy steel template/drill guide is available from your distributor.

Make sure to follow manufacturer's recommendation for bit size for the particular anchors you are using.

The dimensions shown in *Figures 13 through 15* are patterns for various models.

NOTE: There are 2 rows of holes in each foot of frame. When installing the machine it is only necessary to use one row in each foot – it doesn't matter which row. If close mounting the machines it will be more convenient to use the inside row on each foot. However, if an anchor pulls out or is damaged, simply drill another hole in the outside row and insert a new anchor.

40 Pound Models

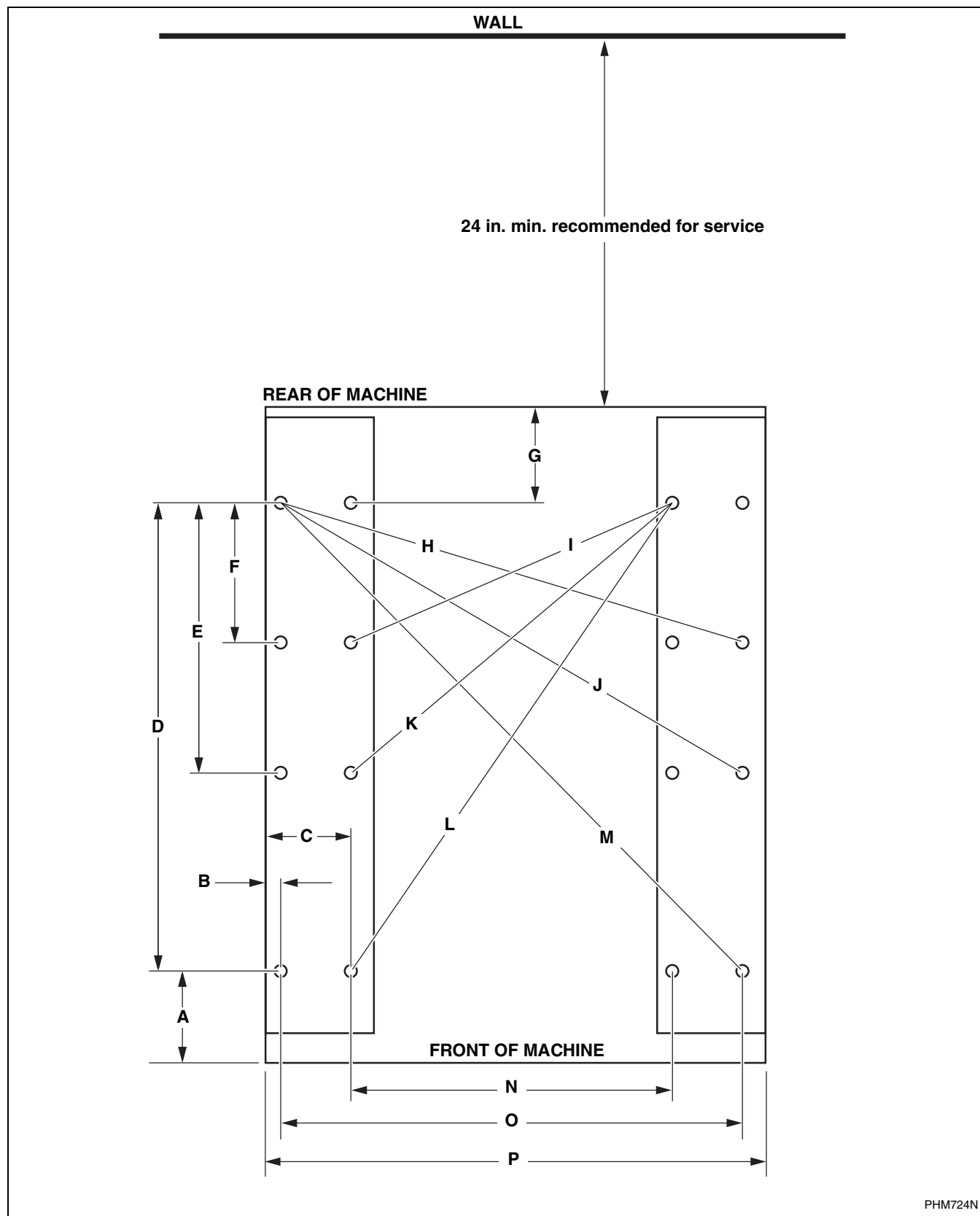


Figure 13

40 Pound			
A	6.125 in. (156 mm)	I	22.88 in. (581 mm)
B	1 in. (25 mm)	J	34.75 in. (883 mm)
C	5.5 in. (140 mm)	K	27.31 in. (694 mm)
D	30.5 in. (775mm)	L	37 in. (940 mm)
E	17.5 in. (445 mm)	M	42.81 in. (1087 mm)
F	9 in. (229 mm)	N	21 in. (533 mm)
G	6.13 in. (156 mm)	O	30 in. (762 mm)
H	31.31 in. (795 mm)	P	32 in. (813 mm)

Table 11

60, 80 and 100 Pound Models

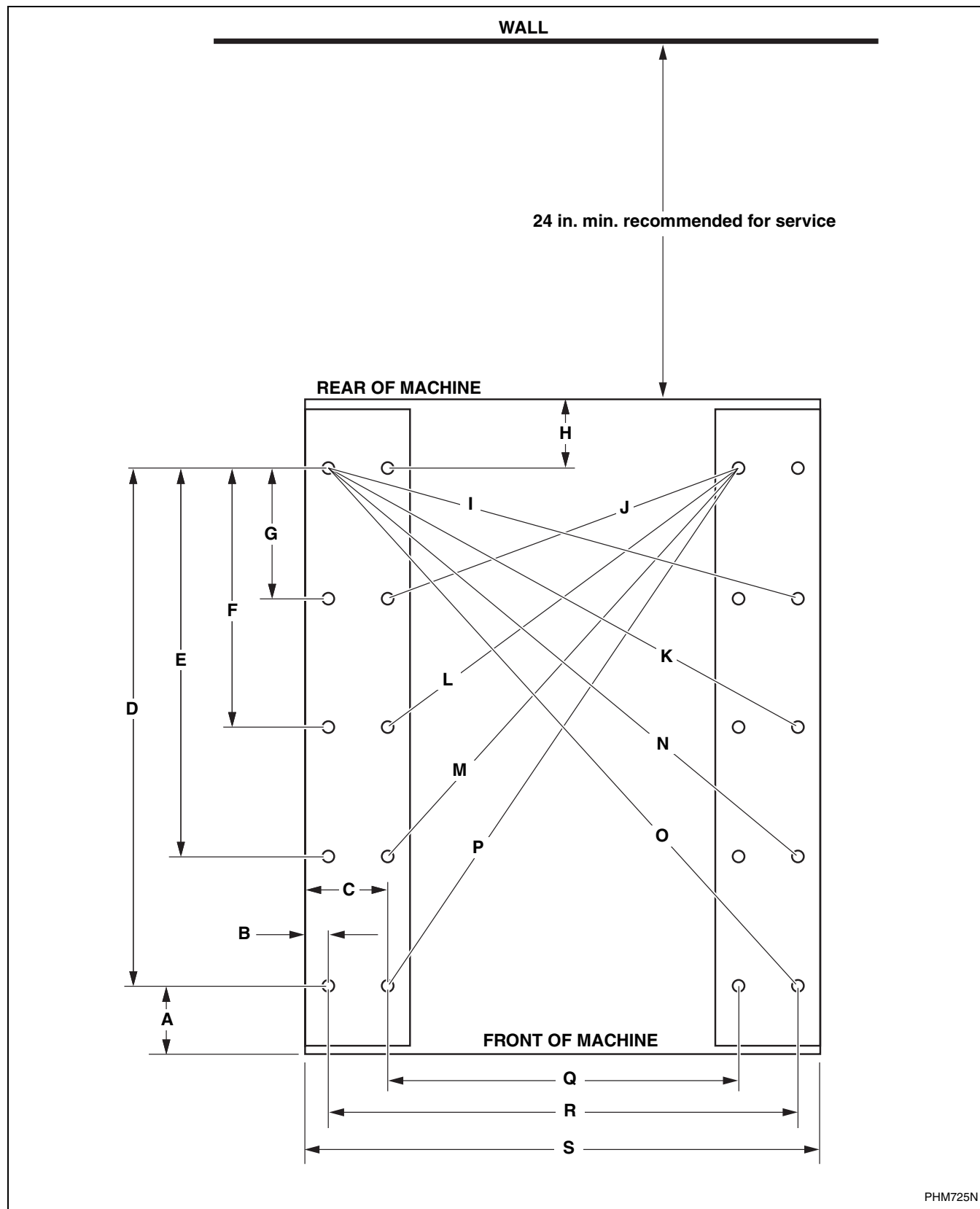


Figure 14

	60 Pound	80 Pound	100 Pound
A	4.56 in. (116 mm)	2.63 in. (67 mm)	7.63 in. (194 mm)
B	1.5 in. (38 mm)	1.5 in. (38 mm)	1.5 in. (38 mm)
C	5.5 in. (140 mm)	7 in. (178 mm)	7 in. (178 mm)
D	35 in. (889 mm)	41.5 in. (1054 mm)	41.5 in. (1054 mm)
E	26.25 in. (667 mm)	33 in. (838 mm)	33 in. (838 mm)
F	17.5 in. (445 mm)	22 in. (559 mm)	22 in. (559 mm)
G	8.75 in. (222 mm)	11 in. (279 mm)	11 in. (279 mm)
H	4.56 in. (116 mm)	4.81 in. (122 mm)	4.81 in. (122 mm)
I	32.69 in. (830 mm)	41 in. (1041 mm)	41 in. (1041 mm)
J	25.6 in. (637 mm)	30.56 in. (776 mm)	30.56 in. (776 mm)
K	36.6 in. (916 mm)	45.19 in. (1148 mm)	45.19 in. (1148 mm)
L	29.31 in. (744 mm)	36 in. (914 mm)	36 in. (914 mm)
M	35.25 in. (895 mm)	43.63 in. (1108 mm)	43.63 in. (1108 mm)
N	41 in. (1041 mm)	51.5 in. (1030 mm)	51.5 in. (1308 mm)
O	47.06 in. (1195 mm)	57.31 in. (1456 mm)	57.31 in. (1456 mm)
P	42.19 in. (1072 mm)	50.38 in. (1280 mm)	50.38 in. (1280 mm)
Q	23.5 in. (597 mm)	28.5 in. (724 mm)	28.5 in. (724 mm)
R	31.5 in. (800 mm)	39.5 in. (1003 mm)	39.5 in. (1003 mm)
S	34.5 in. (876 mm)	42.5 in. (1080 mm)	42.5 in. (1080 mm)

Table 12

125, 140 and 175 Pound Models

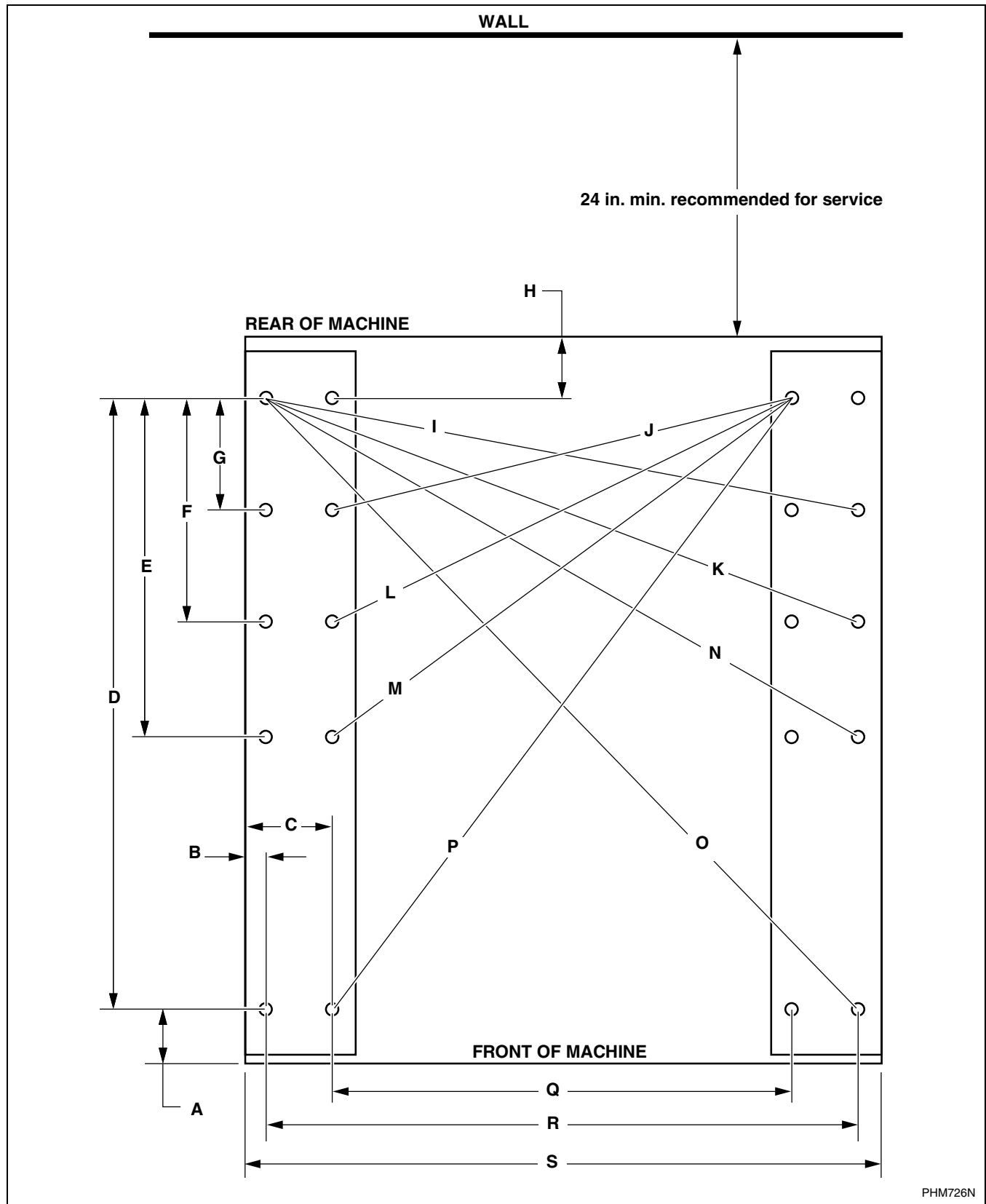



Figure 15

	125 Pound	140 Pound	175 Pound
A	4 in. (102 mm)	4.63 in. (118 mm)	4.63 in. (118 mm)
B	1.5 in. (38 mm)	1.5 in. (38 mm)	1.5 in. (38 mm)
C	7 in. (178 mm)	7 in. (178 mm)	7 in. (178 mm)
D	47.5 in. (1207 mm)	49 in. (1245 mm)	58.88 in. (1496 mm)
E	27 in. (686 mm)	27 in. (686 mm)	31.88 in. (810 mm)
F	18 in. (457 mm)	18 in. (457 mm)	22.88 in. (581 mm)
G	9 in. (229 mm)	9 in. (229 mm)	13.88 in. (353 mm)
H	3.5 in. (89 mm)	4.88 in. (124 mm)	4.88 in. (124 mm)
I	48.13 in. (1223 mm)	48.13 in. (1223 mm)	48.13 in. (1223 mm)
J	37.38 in. (949 mm)	37.38 in. (949 mm)	37.38 in. (949 mm)
K	50.56 in. (1284 mm)	50.56 in. (1284 mm)	50.56 in. (1284 mm)
L	40.5 in. (1029 mm)	40.5 in. (1029 mm)	40.5 in. (1029 mm)
M	45.19 in. (1148 mm)	45.19 in. (1148 mm)	45.19 in. (1148 mm)
N	54.44 in. (1383 mm)	54.44 in. (1383 mm)	54.44 in. (1383 mm)
O	67 in. (1702 mm)	68.06 in. (1729 mm)	71.75 in. (1822 mm)
P	59.75 in. (1518 mm)	60.94 in. (1548 mm)	65.06 in. (1653 mm)
Q	36.25 in. (921 mm)	36.25 in. (921 mm)	36.25 in. (921 mm)
R	47.25 in. (1200 mm)	47.25 in. (1200 mm)	47.25 in. (1200 mm)
S	50.25 in. (1276 mm)	50.25 in. (1276 mm)	50.25 in. (1276 mm)

Table 13

Water Connection

	<h3>WARNING</h3>
<p>To avoid personal injury, recommended inlet water temperature should be no higher than 125° Fahrenheit (51° Celsius).</p>	
<small>W709</small>	

In order for machine to function properly, water service should have the following:

- Separate hot and cold lines with individual shut-off valves.
- Hot water temperature should be a maximum of 125°F (51°C). If available water temperature is lower, it is recommended to equip machines with steam or electric heating.
- Water pressure should be between 30 and 85 psi (2 to 7 bar). The machine will function properly at lower pressure but with increased filling times.
- It is highly recommended that screen filters be installed in water supply lines to keep rust, grit or other foreign material out of solenoid valves.
- Suitable air cushions should be installed in supply lines to prevent “hammering.” Refer to *Figure 16*.

To connect water feeders to rear of machine, use flexible hoses. Because this is a vibrating machine, water lines must allow for movement or leaks may result. Hang hoses in a large loop behind machine so that they are not kinked or pinched. Refer to *Table 1* and *Table 2* for connection sizes and recommended hose sizes.

For machines labeled with the CE mark, backsiphon protection devices must be installed previous of all machine water inlet valves in accordance with accepted European standards.

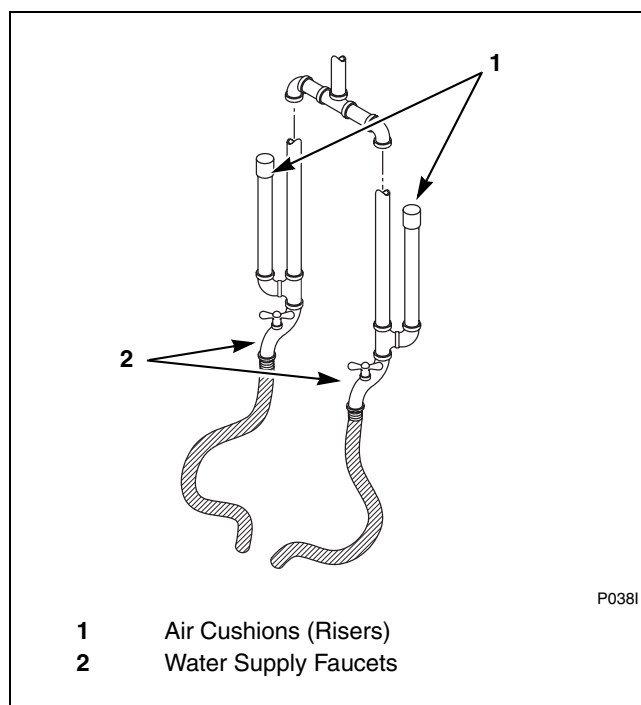


Figure 16

Drain Connection Requirements

A drain system of adequate capacity is essential to washer-extractor performance. Ideally, water should empty through a vented pipe directly into a sump or floor drain. *Figure 17* and *Figure 18* show drain line and drain trough configurations.

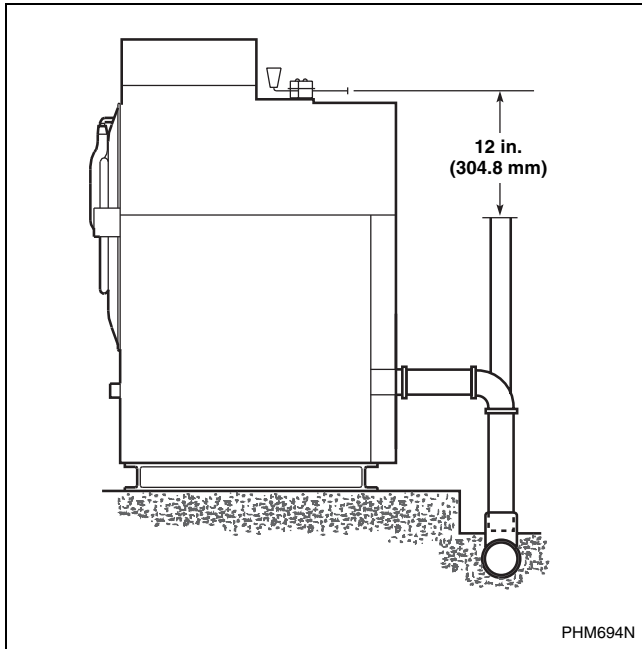


Figure 17

A flexible connection must be made to a vented drain system to prevent an air lock and to prevent siphoning.

IMPORTANT: Washer-extractor must be installed in accordance with all local codes and ordinances.

IMPORTANT: The top of the vent must be 12 inches (304.8 mm) lower than bottom of inlet valves.

If proper drain size is not available or practical, a surge tank is required. A surge tank in conjunction with a sump pump should be used when gravity drainage is not possible, such as in below-ground-level installations.

Before any deviation from specified installation procedures is attempted, the customer or installer should contact the distributor.

Increasing drain hose length, installing elbows or causing bends will decrease drain flow rate and increase drain times, impairing washer-extractor performance.

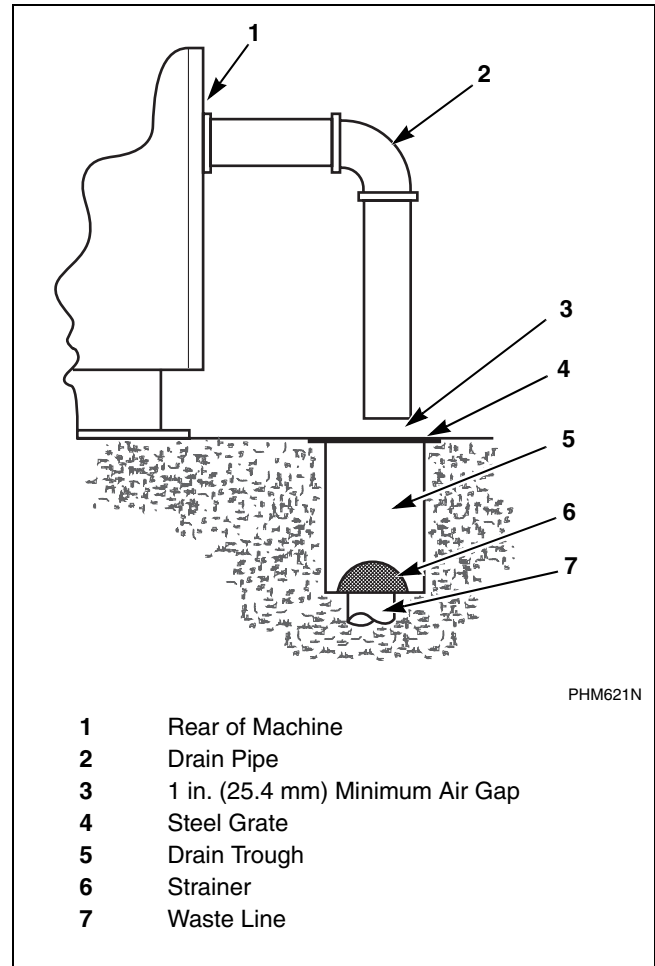




Figure 18


Installation of additional washer-extractors will require proportionately larger drain connections.

Electrical Installation Requirements

IMPORTANT: Electrical ratings are subject to change. Refer to serial decal for electrical ratings information specific to your machine.

	WARNING
<p>This machine must be installed, adjusted, and serviced by qualified electrical maintenance personnel familiar with the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury and/or equipment damage, and may void the warranty.</p>	
SW004	

	WARNING
<p>Dangerous voltages are present in the electrical control box(es) and at the motor terminals. Only qualified personnel familiar with electrical test procedures, test equipment, and safety precautions should attempt adjustments and troubleshooting. Disconnect power from the machine before removing the control box cover, and before attempting any service procedures.</p>	
SW005	


	WARNING
<p>Ensure that a ground wire from a proven earth ground is connected to the ground lug near the input power block on this machine. Without proper grounding, personal injury from electric shock could occur and machine malfunctions may be evident.</p>	
SW008	


Electrical connections are made at the rear of the machine. The machine must be connected to the proper electrical supply shown on the identification plate attached to the side of the control module.

IMPORTANT: Alliance Laundry Systems warranty does not cover components that fail as a result of improper input voltage.

The AC inverter drive requires a clean power supply free from voltage spikes and surges. A voltage monitor should be used to check incoming power. The customer's local power company may provide such a monitor.

If input voltage measures above 230V for a 200V drive or above 460 for a 400V drive, ask the power company to lower the voltage. As an alternative, a step-down transformer kit is available from the distributor. Voltages above 240 and 480 require additional measures. Contact the distributor or the manufacturer for assistance.


	WARNING
<p>Never touch terminals or components of the AC inverter drive unless power is disconnected and the "CHARGE" indicator LED is off. The AC inverter drive retains potentially deadly voltage for some time after the power is disconnected. There are no user-serviceable parts inside the AC inverter drive. Tampering with the drive will void the warranty.</p>	
SW009	

	DANGER
<p>When controlling the AC inverter drive with a parameter unit, the machine's computer and its safety features are bypassed. This would allow the basket to rotate at high speeds with the door open. When using a parameter unit to control the AC inverter drive, a large sign should be placed on the front of the machine warning people of the imminent danger.</p>	
SW003	

	WARNING
<p>This machine must be protected by a circuit breaker. DO NOT USE FUSES!</p>	
W691	

The AC drive provides thermal overload protection for the drive motor. However, a separate three-phase circuit breaker or electrical supply disconnecting device must be installed for complete electrical overload protection. This prevents damage to the motor by disconnecting all legs if one should be lost accidentally. Check the data plate on the back of the washer-extractor or refer to *Table 14* for circuit breaker requirements.

IMPORTANT: Do NOT use fuses in place of a circuit breaker.

	CAUTION
Do not use a phase adder on any variable-speed machine.	
SW037	

The washer-extractor should be connected to an individual branch circuit not shared with lighting or other equipment.

The connection should be shielded in a liquid-tight or approved flexible conduit with proper conductors of correct size installed in accordance with the National Electric Code or other applicable codes. The connection must be made by a qualified electrician using the wiring diagram provided with the washer-extractor or according to accepted European standards for equipment labeled with the CE mark.


Use wire sizes indicated in *Table 14* for runs up to 50 feet (15.24 meters). Use next larger size for runs of 50 to 100 feet (15.24 to 30.48 meters). Use 2 sizes larger for runs greater than 100 feet (30.48 meters).

For personal safety and for proper operation, the washer-extractor must be grounded in accordance with state and local codes. If such codes are not available, grounding must conform with the National Electric Code, article 250-95 or accepted European standards for equipment labeled with the CE mark. The ground connection must be made to a proven earth ground, not to conduit or water pipes.

Circuit Breakers

The machines are to be connected to individual common trip circuit breakers. Use only UL 489 rated circuit breakers. Fuses are not to be used in any installations. (Fuses may fail separately causing a single-phase voltage condition.) A single-phase condition will cause the other lines to have a considerable change in current draw suddenly, which may cause the inverter or drive motor to fail. Do not install more than one machine per breaker and do not install any other equipment on the breaker supplying the machine. If there is a “stinger” leg (also known as high leg, red leg, etc.) it must be connected to L3 of the terminal block of the machine.

Grounding

	WARNING
Failure to provide this equipment with a proper proven earth ground may result in a severe shock hazard and may increase EMI emissions.	
W708	

All equipment should be grounded with a proven earth ground. Do not use water pipes or electrical conduit as an earth ground path. All grounding and wiring must conform to local and national electrical codes.

Wire Size

Wire size must meet or exceed all codes for breaker size.

Use either SO type cord or flex conduit with stranded copper conductors of prescribed size for power supply between machine and wall. Because this machine vibrates in normal operation, hard conduit may become loose and cause wire abrasion and solid conductor wires may break during normal operation on vibrating machines.

Specifications and Dimensions

Pocket Hardmount Electrical Specifications													
Voltage Designation						Standard				Electric Heat			
Model	Code	Voltage	Cycle	Phase	Wire	Full Load Amps	Breaker	AWG	mm ²	Full Load Amps	Breaker	AWG	mm ²
40H	N	380 – 480	50/60	3	3	4	15	14	2.5	29	35	8	10
	Q	200 – 240	50/60	3	3	8	15	14	2.5	56	60	6	16
60H	N	380 – 480	50/60	3	3	6	15	14	2.5	29	35	8	10
	Q	200 – 240	50/60	3	3	11	15	14	2.5	84	90	3	25
80H	N	380 – 480	50/60	3	3	8	15	14	2.5	31	35	8	10
	Q	200 – 240	50/60	3	3	15	20	12	4	87	110	2	35
100H	N	380 – 480	50/60	3	3	8	15	14	2.5	32	40	8	10
	Q	200 – 240	50/60	3	3	15	20	12	4	88	110	2	35
125H	N	380 – 480	50/60	3	3	10	15	14	2.5	Not Available			
	Q	200 – 240	50/60	3	3	19	30	10	6				
140H	N	380 – 480	50/60	3	3	11	15	14	2.5	Not Available			
	Q	200 – 240	50/60	3	3	20	30	10	6				
175H	N	380 – 480	50/60	3	3	15	20	12	4	Not Available			
40M	N	380 – 480	50/60	3	3	3	15	14	2.5	29	35	8	10
	Q	200 – 240	50/60	3	3	5	15	14	2.5	56	60	6	16
60M	N	380 – 480	50/60	3	3	5	15	14	2.5	29	35	8	10
	Q	200 – 240	50/60	3	3	9	15	14	2.5	84	90	3	25
80M	N	380 – 480	50/60	3	3	6	15	14	2.5	31	35	8	10
	Q	200 – 240	50/60	3	3	11	15	14	2.5	87	110	2	35
100M	N	380 – 480	50/60	3	3	7	15	14	2.5	32	40	8	10
	Q	200 – 240	50/60	3	3	12	15	14	2.5	88	110	2	35
140M	N	380 – 480	50/60	3	3	8	15	14	2.5	Not Available			
	Q	200 – 240	50/60	3	3	16	20	12	4				
NOTE: Wire-size based on: NFPA 70 (NEC), Table 310.16, 75°C Column. No more than three current carrying conductors per raceway. Use copper conductors only. Use three-phase breakers only. Do not use fuses or single-phase breakers. Suggested breaker size based on NFPA 70, Section 240.6. Contact local authority having jurisdiction for additional information. Local electrical codes supersede all suggestions of this table. Follow all local electrical codes. Local is defined as place of machine installation.													

Table 14

Making Connections to Machine

After electrical service feeder has been installed and electrical service voltage verified by a volt meter, follow this procedure to connect service to the equipment.

1. Remove screw securing electrical service connection panel and remove panel from machine.
2. Install an appropriate strain relief or conduit connector in cover.
3. Feed wire through connector leaving about 6 in. (150 mm) pigtails on inside of cover. Strip about 3/8 in. (10 mm) insulation off the end of each wire.
4. Tighten strain relief or conduit connector in place.
5. Connect ground wire to ground terminal at electrical service connections on machine.
6. Connect L1, L2 and L3 to terminal block provided at electrical service connections on machine.
7. Reinstall panel onto rear of machine and tighten cover screw.

Adjusting Control Transformer Taps

Adjust control transformer to deliver correct voltage to machine controls.

1. Measure line-to-line voltage to be supplied to machine with a volt meter.
2. Refer to the schematic supplied with machine and locate transformer terminal chart.
3. In this chart, locate the primary voltage range, which corresponds to line voltage measured above, and note terminals which would be used on primary.
4. In the chart, locate the secondary terminals corresponding to line voltage. If line voltage is not in chart, round it up to the next higher voltage, which is in the chart, or contact a service technician for assistance.
5. Remove two screws holding rear electrical enclosure in place and remove rear electrical enclosure cover.
6. Locate control transformer in enclosure – the primary is on the right of the transformer and the secondary terminals are on the left. Make sure terminals are connected to primary and secondary terminals selected in steps 3 and 4.

7. Power up machine temporarily and, using a volt meter, verify the voltage on transformer secondary is between 100 and 130 VAC.

Provisions for 50 Hz Installations

If machine is to be installed on a 50 Hz power system, adjust control transformer taps as described in **Adjusting Control Transfer Taps** section. Then change drain valve wiring as follows:

1. Disconnect power from machine. Follow lock-out/tag-out procedures.
2. Remove lower rear panel to access drain valves.
3. Snap black plastic cover off of each drain valve motor by locating and squeezing two tabs on each cover.
4. On each drain valve motor there are three terminals (labeled 60 Hz, 50 Hz and N). Locate these terminals.
5. On each drain valve motor, move wire from 60 Hz tap to 50 Hz tap. There should be wires on 50 Hz terminal and N terminal.
6. Reinstall black plastic motor covers.
7. Reinstall rear panel.
8. Reconnect power to machine.

NOTE: If the proper tap on drain valve motor is not selected it will run hot and will be damaged.

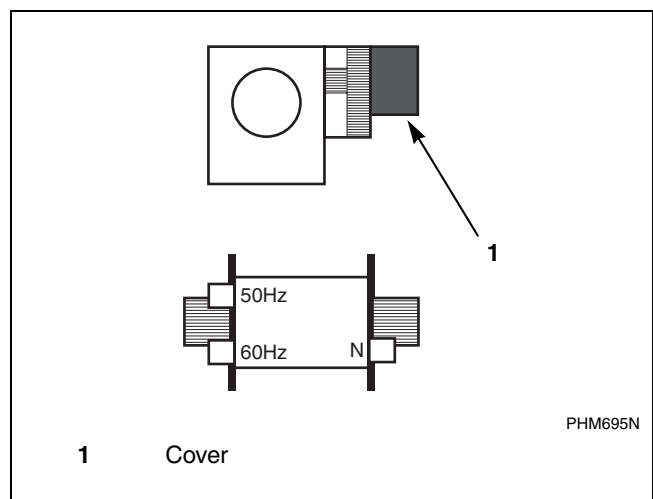



Figure 19

Steam Requirements (Steam Heat Option Only)



WARNING

Never touch internal or external steam pipes, connections, or components. These surfaces can be extremely hot and will cause severe burns. The steam must be turned off and the pipe, connections, and components allowed to cool before the pipe can be touched.

SW014


For washer-extractors equipped with optional steam heat, install piping in accordance with approved commercial steam practices. Steam requirements are shown in *Table 15*.

NOTE: Failure to install supplied steam filter may void warranty.

Steam Supply Information						
	40	60	80	100	125	140/175
Steam inlet connection, in. (mm)	1/2 (DN13)	1/2 (DN13)	1/2 (DN13)	1/2 (DN13)	3/4 (DN19)	3/4 (DN19)
Number of steam inlets	1	1	1	1	1	1
Recommended pressure, psi (bar)	30 – 80 (2 – 5.5)	30 – 80 (2 – 5.5)	30 – 80 (2 – 5.5)	30 – 80 (2 – 5.5)	30 – 80 (2 – 5.5)	30 – 80 (2 – 5.5)
Maximum pressure, psi (bar)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)

Table 15

Chemical Injection Supply System

	<h3>WARNING</h3>
<p>Wear eye and hand protection when handling chemicals; always avoid direct contact with raw chemicals. Read the manufacturer's directions for accidental contact before handling chemicals. Ensure an eye-rinse facility and an emergency shower are within easy reach. Check at regular intervals for chemical leaks.</p>	
SW016	

Undiluted chemical dripping can damage the washer-extractor. Therefore, all chemical supply dispenser pumps should be mounted below the washer's injection point. All dispenser tubing should also run below the injection point. Loops do not prevent drips if these instructions are not followed. Failure to follow these instructions could damage the machine and void the warranty. *Figure 20* shows a typical chemical injection supply system.

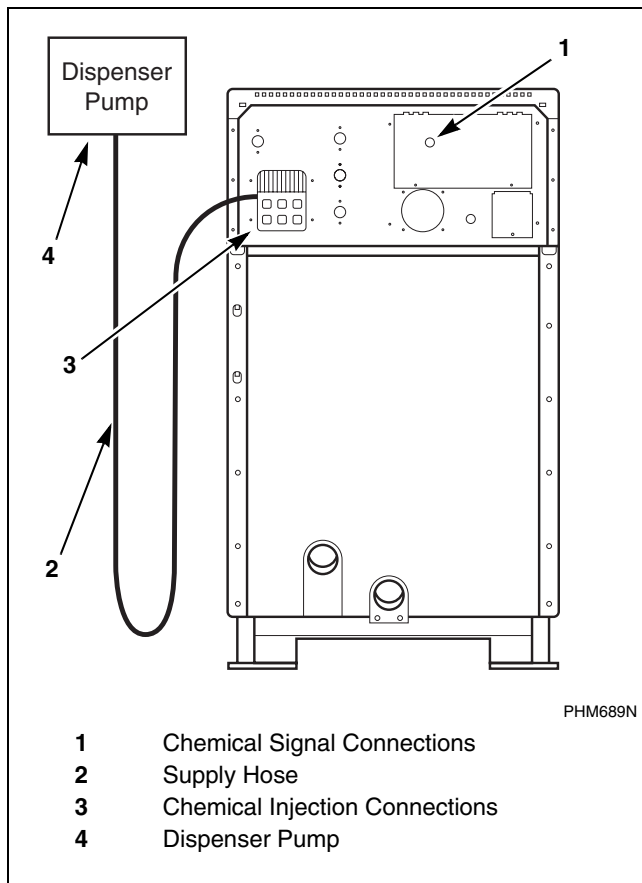


Figure 20

Chemical Service Connections

Chemical service connections are located inside the machine's rear electrical enclosure. Provisions include:

- Clearly marked chemical signal locations.
- Chemical signals are prewired for 85 VAC signals (85 VAC on, 0 VAC off) and can be easily changed to accommodate dry contact chemical signal formats.
- Up to 12 chemical signals are available.
- A timer hold input is available for use with dispensing systems feeding multiple machines.
- 7/8 in. (22 mm) hole is provided in rear electrical panel cover for mounting a typical chemical pump interface module or feeding chemical pump control signal wires.

Connection of Chemical Supply Hoses

To connect a chemical supply hose to machine:

1. Remove one of the plastic plugs from an injection port.
2. Screw one of the 6 3/8 in. (10 mm) nipples supplied with machine into open injection port.
3. Connect feed hose to nipple and secure hose with a hose clamp.
4. Ideally, pump system should be mounted so that it is lower than chemical injection ports. Hose connections at injection port should be highest point in hose to prevent chemical drippage. Refer to *Figure 20*. **Making loops in chemical feed hoses does not prevent dripping.**

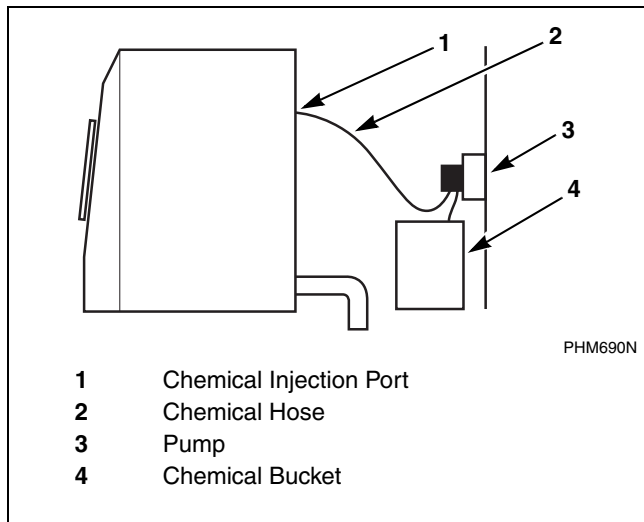


Figure 21

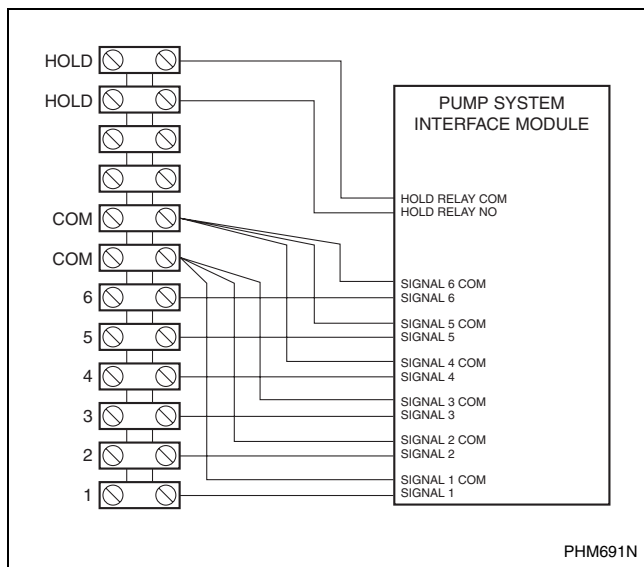


Figure 22

Connection of Chemical Pump Signals

To connect pump control to AC voltage signals, do the following:

1. Remove large rear electrical module cover on machine to access chemical terminals.
2. Mount pump system interface module using 7/8 in. (22 mm) hole in cover so that box will be on outside of machine when panel is reinstalled.
3. Connect pump system signal wires 1 through 6 to terminals 1 through 6 on the machine chemical signal terminal block.
4. Connect all pump system signal common wires to two machine chemical signal terminals labeled "COM" (it is recommended to connect three wires to each COM terminal as drawn in *Figure 22* – each terminal can accommodate up to 3 16 AWG wires).
5. If a chemical timer hold function is being used (this is common on solid supply systems connected to multiple machines), connect hold relay common terminal to one of two "HOLD" terminals. Connect chemical hold relay normally open wire to remaining "HOLD" terminal as shown in diagram.
6. Reinstall rear electrical module cover with chemical system interface module mounted on it.
7. Finish pump system installation per its manufacturer's instructions.

NOTE: Consult factory service or distributor for assistance with dry contact format signals (to drive pumps directly, for example).



WARNING

This machine is not designed to provide power for a chemical pump system! Connecting such a load to the machine's controls may overload the control transformer! Never connect power for any device to the machine's main power terminal block – this is a violation of the NEC and other electrical regulations.

W692

First Start-Up

IMPORTANT: The following safety checks are to be performed BEFORE initial start-up.

1. Make sure all electrical and plumbing connections have been made in accordance with applicable codes and regulations.
2. Make sure machine is electrically grounded. **This is a high leakage current device!** Improper grounding can cause electrical shock hazards and EMI problems.
3. Make sure all service connections (water, drain, electrical, steam, etc.) to equipment are flexible and are of correct size, length and type. Make sure there are no kinks and that all clamps and attachment points are secure.
4. Make sure all transport brackets have been removed (where applicable).
5. Make sure machine is properly grouted to floor and leveled. Always allow plenty of time for grout to harden before tightening anchor bolts and running machine.
6. Make sure anchor bolts have been tightened properly.

IMPORTANT: The following safety checks are to be performed DURING the initial start-up.

1. Verify door lock system works properly (whenever machine is in operation, loading door must be in the closed position and locked). Do this by attempting to unlock and open loading door while machine is in operation. If necessary, call a qualified technician.
2. Verify machine cannot operate with loading door open. Do this by attempting to start a program while loading door is open. If necessary, call a qualified technician.
3. Verify machine does not move or vibrate excessively. Do this by loading machine with a small load of laundry (about half capacity) and running a program with a high-speed extract. The machine should be reasonably quiet and still during the extract.